

ŠKODA

Workshop Manual OCTAVIA II 2008 ➤

Manual gearbox 0AJ

Edition 09.08

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List of Workshop Manual Repair Groups

Repair Group

00 - Technical data

30 - Clutch

34 - Control, housing

35 - Wheels, shafts

39 - Final drive, differential gear



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Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.



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00 – Technical data

1 Identification of the gearbox

Assignment ➤ [page 1](#) .

1.1 Location on the gearbox

Identification characters and production date -arrow-

Identification characters and production date of the gearbox -arrow-

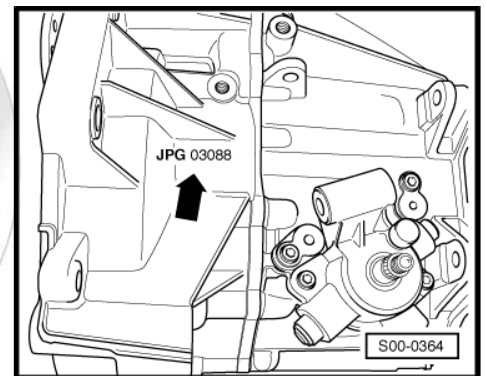
Example:	JPG	03	08	8
	Identification characters	Day	Month	Manufacturing year 2008

Additional data gives information about the manufacturing factory.



Note

The gearbox identification characters also appear on the vehicle data stickers.



1.2 Identification characters, aggregate assignment, ratios, capacities

Manual gearbox		6 speed 0AJ		
Gearbox	Identification characters	KRG	LHY	LHY
	Manufactured from through	11.08 11.08	11.08	02.10
Assignment	Engine	1.4 ltr./90 kW TSI		1.2 ltr./77 kW TSI
Ratio: Z 2 : Z 1	Final drive	73 : 18 = 4,055		
Ratios	1st gear	47 : 13 = 3,615		
	2nd gear	43 : 22 = 1,954		
	3rd gear	41 : 32 = 1,281		
	4th gear	36 : 37 = 0,973		
	5th gear	35 : 45 = 0,777		
	6th gear	31 : 48 = 0,646		
	Reverse gear	35 : 24 x 24 : 11 = 3.182		
Capacity		2.0 litres		
Specification		⇒ Electronic Catalogue of Original Parts		



Manual gearbox		6 speed 0AJ		
Gearbox	Identification characters	KRG	LHY	LHY
Clutch control		hydraulic		
Clutch plate Ø		⇒ Electronic Catalogue of Original Parts		
Drive shaft flange Ø		100 mm		

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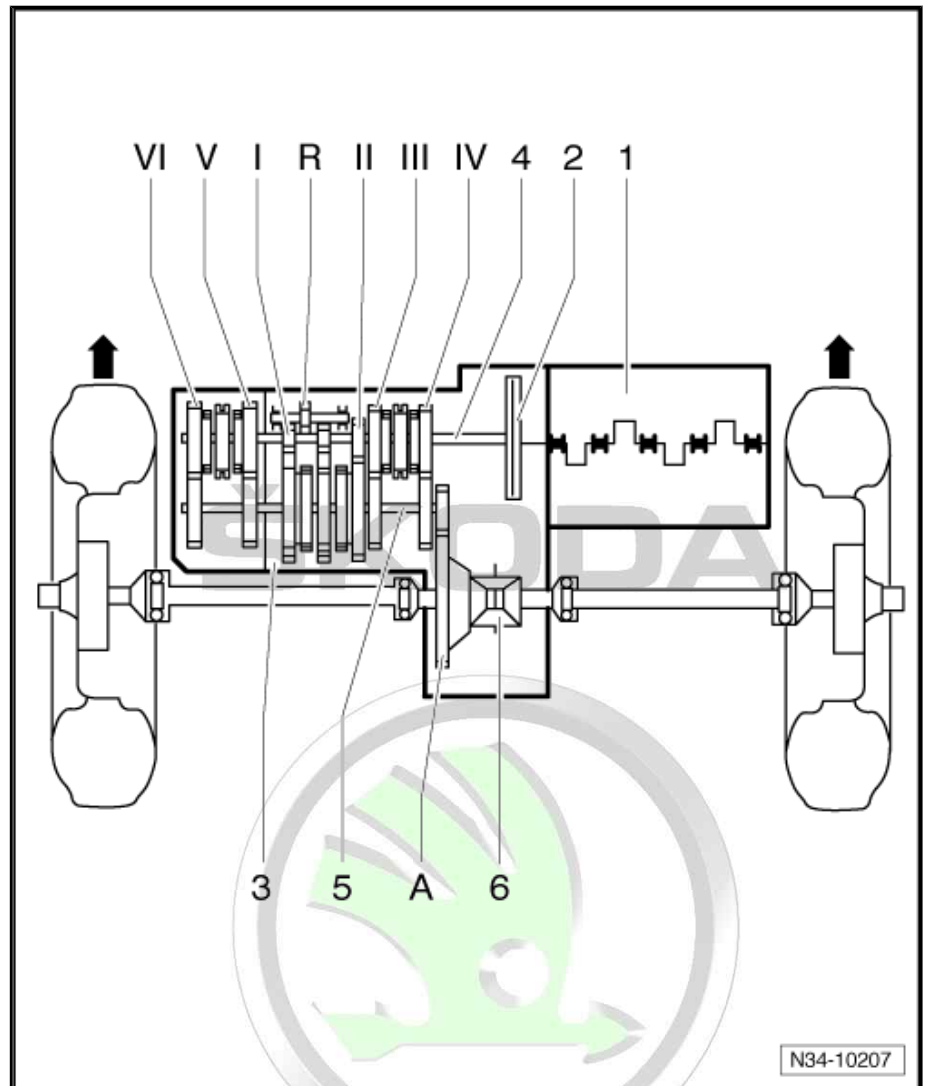
2 Transmission System - Overview

2.1 Designation of components and transmission ratio



The -arrows- point in the direction of travel.

- 1 - Engine
- 2 - Clutch
- 3 - Manual gearbox
- 4 - Drive shaft
- 5 - Output shaft
- 6 - Differential gear
- I - 1st gear
- II - 2nd gear
- III - 3rd gear
- IV - 4th gear
- V - 5th gear
- VI - 6th gear
- R - Reverse gear
- A - Final drive



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3 General repair information

Scrupulous care and cleanliness as well as the proper tools are essential requirements for carrying out proper and successful gearbox repairs. Obviously, the generally valid basic safety rules apply to repair work.

A number of generally valid notes for individual repair operations - which are otherwise listed several times at numerous points in the workshop manual - are summarized under the term "components" ➔ [page 4](#) . They apply to this workshop manual.

3.1 Components

Gearbox

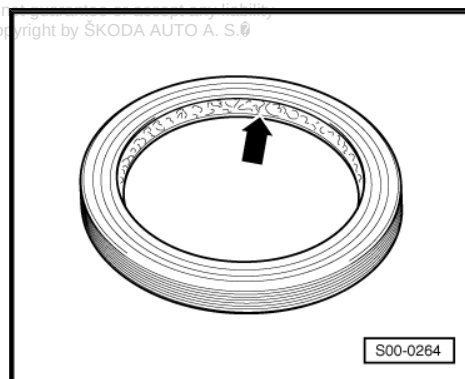
- ◆ When installing the manual gearbox, ensure the dowel sleeves are correctly located between the engine and gearbox.
- ◆ When assembling mounts as well as waxed components, the contact surfaces must be cleaned. Contact surfaces must be free of wax and grease.
- ◆ Bolts and other attachments should have a classification in the ➔ Electronic Catalogue of Original Parts .
- ◆ When replacing the gearbox check the gear oil level ➔ [page 71](#) .
- ◆ Capacities and specification ➔ [page 1](#) .

Sealant

- ◆ Thoroughly clean the contact surfaces of the housing before applying the silicone sealant.
- ◆ Apply sealant AMV 188 200 03 evenly and not too thick.

O-rings, gasket rings, gaskets

- ◆ Always replace O-rings, gasket rings and gaskets ➔ Electronic Catalogue of Original Parts .
- ◆ After removing gaskets, check the contact surface in the housing or shaft for burrs or damage which occurred during the assembly.
- ◆ Radial shaft seals - before mounting lightly oil at outside diameter and fill half the space between the sealing lips -arrow- with sealing grease G 052 128 A1.
- ◆ The open side of the sealing rings is turned towards the fluid to be sealed.
- ◆ Press in new gasket ring in such a way that the sealing lip is not located on the same point as the sealing lip of the old gasket ring (use tolerance for insertion depth).
- ◆ Before inserting lightly oil the O-rings, in order to prevent the rings being squashed during installation.
- ◆ Inspect the oil level after replacing the gaskets and gasket rings ➔ [page 71](#) .

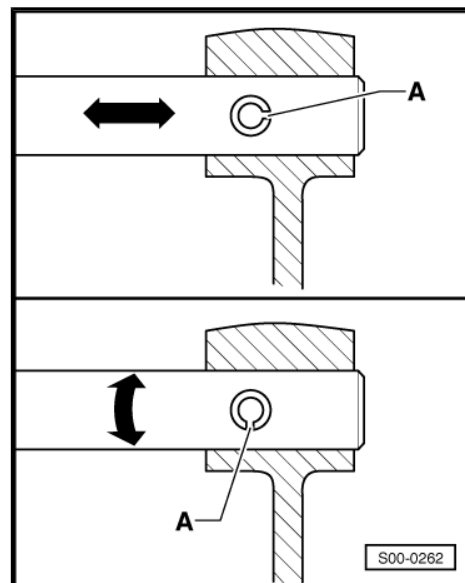


Locking elements

- ◆ Do not over-tension the circlips, replace if necessary ⇒ Electronic Catalogue of Original Parts .
- ◆ Circlips must be positioned in the base of the groove.
- ◆ Replace roll pins. Fitting location: slot longitudinally to power flow.

Screws, nuts

- ◆ Slacken and tighten screws or fixing nuts of covers and housings diagonally across in stages.
- ◆ Do not twist particularly sensitive parts - e.g. clutch pressure plates - and slacken and tighten diagonally across.
- ◆ Tightening torques apply for non-oiled nuts and bolts.
- ◆ Always replace the self-locking screws and nuts ⇒ Electronic Catalogue of Original Parts .
- ◆ Clean all threaded holes into which self-locking screws or screws with locking agent are inserted (using e.g. a thread tap). Otherwise there is a risk that the bolts will shear at the next disassembling.
- ◆ It is important to ensure at all bolted connections that the contact surfaces as well as the nuts and bolts are waxed only after being installed, should this be necessary.

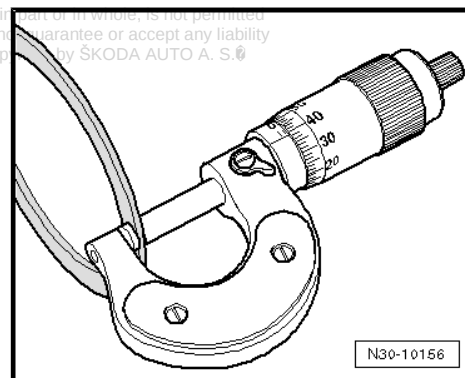


Bearings

- ◆ New taper roller bearings are fitted as supplied and do not require any additional lubrication.
- ◆ Insert moist all bearings (except taper roller bearings) into the gearbox with gear oil.
- ◆ Before installing, heat the inner rings of the bearing on a heating plate or with the induction heater unit -VAS 6414- to approx. 100°C, when installing press in axial and play-free up to the stop.
- ◆ Do not mix up the outer and inner races of bearings of the same size.
- ◆ Always jointly replace tapered-roller bearings on the same shaft and use products of the same manufacturer.
- ◆ Always position needle bearing with the lettered side (thicker end) towards the drift pin.

Shims

- ◆ Gauge shims at several points with a micrometer. Different tolerances allow to measure the required thickness for each washer very precisely.
- ◆ Inspect for burrs and damage.
- ◆ Install only shims which are in perfect condition.



Synchronizer rings

- ◆ These are not interchangeable. If re-using, allocate synchronizer rings to the same sliding gear.
- ◆ Inspect for wear, replace if necessary ⇒ Electronic Catalogue of Original Parts .
- ◆ Check slots -arrow 1- on synchronizer ring -A-, or check the inside of the ring for flattened parts (slots worn).
- ◆ When installing the intermediate ring -B-, check whether it has no scores, blue coloring (caused by overheating) and other damages on the outer -arrow 2- and inner -arrow 3- friction surface.
- ◆ Insert with some gearbox fluid.

Pinions

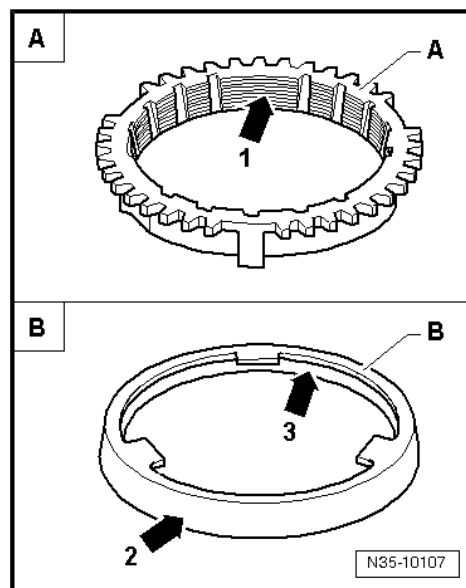
- ◆ Clean and heat on a heating plate or with the induction heater unit -VAS 6414- to approx. 100°C before pressing on.
- ◆ Check fitting position.

Output gear

- ◆ Check 1st to 6th gear sliding gears after assembly for low axial play or for smooth operation.

Clutch control

- ◆ When removing gearbox, remove slave cylinder without opening the line system.
- ◆ If the slave cylinder with connected hydraulic line is removed, do not depress the clutch pedal. Otherwise the piston is pressed out of the slave cylinder.
- ◆ Do not tilt the clutch pressure plate, release or tighten in small stages crosswise
- ◆ If the clutch pedal does not return to its initial position after the coupling procedure - clutch pedal in home position - the clutch control must be bled (further measures ⇒ [page 23](#)).
- ◆ In order to reduce unpleasant odours if the clutch is burnt, thoroughly clean the clutch housing as well as the flywheel and the engine on the side of the gearbox.



30 – Clutch

1 Repairing clutch control

1.1 Overview



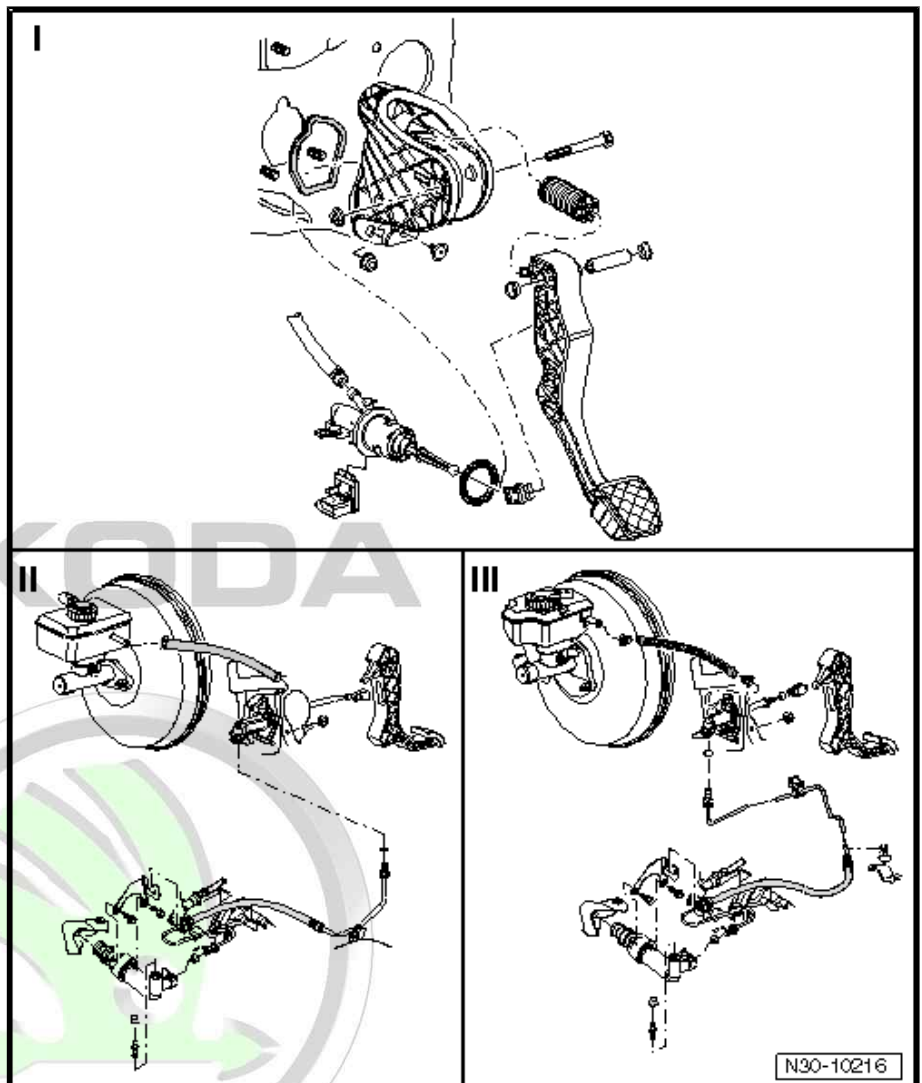
Note

- ◆ After the battery earth strap is disconnected and reconnected, carry out additional operations ⇒ Electrical System ⇒ Rep. Gr. 27.
- ◆ Grease all bearing and contact surfaces with grease -G 000 450 02-.

I - Summary of components -
Foot controls ⇒ [page 8](#)

II - Summary of components -
Hydraulic (left-hand drive)
⇒ [page 18](#)

III - Summary of components -
Hydraulic (right-hand drive)
⇒ [page 21](#)



1.2 Summary of components - Foot controls

1 - Front wall

- ☐ with mount for bracket

2 - Gasket

- ☐ replace ⇒ Electronic Catalogue of Original Parts
- ☐ between bracket and front wall
- ☐ self-adhesive
- ☐ glue to bracket

3 - Bracket

- ☐ for support of clutch pedal
- ☐ removing and installing ⇒ [page 12](#)

4 - Screw

5 - Over-centre helper spring

- ☐ removing and installing ⇒ [page 9](#)

6 - Bushing

7 - Bearing bolt

8 - Clutch pedal

- ☐ removing and installing ⇒ [page 10](#)

9 - Support

- ☐ removing and installing ⇒ [page 10](#)

10 - Gasket

- ☐ replace ⇒ Electronic Catalogue of Original Parts
- ☐ between master cylinder and bracket

11 - Master cylinder

- ☐ removing and installing after removing the bracket ⇒ [page 14](#)
- ☐ test tightness ⇒ [page 23](#)

12 - Clutch position sender -G476-

- ☐ removing and installing ⇒ [page 16](#)
- ☐ check ⇒ Vehicle diagnosis, testing and information system VAS 5051

13 - Clamp

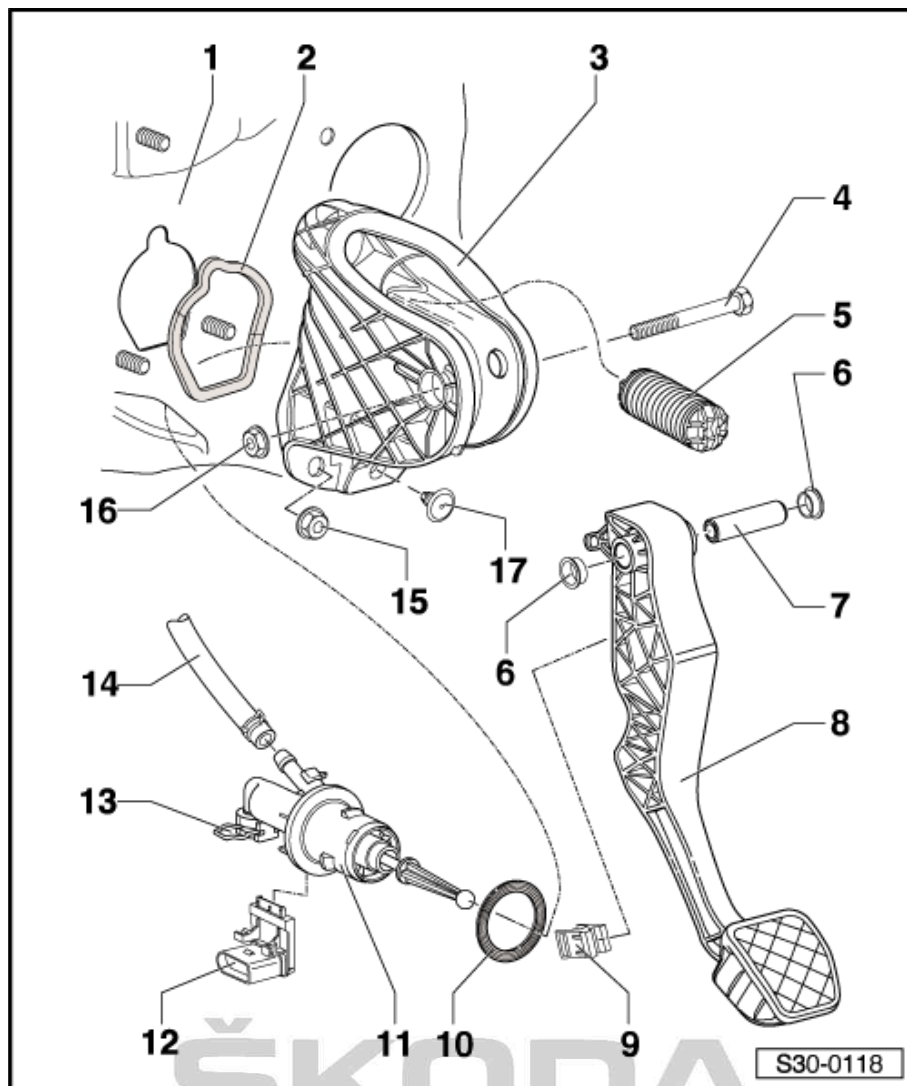
- ☐ to remove and install the tube-hose line pull out retaining clip up to the stop

14 - Tubing

- ☐ Plastic return hose ⇒ [page 18](#)
- ☐ Do not use hose clamp -MP7-602-
- ☐ test tightness ⇒ [page 23](#)

15 - 20 Nm

- ☐ 3 pieces
- ☐ self-locking



- ❑ for bracket on front wall
- ❑ replace ⇒ Electronic Catalogue of Original Parts

16 - 25 Nm

- ❑ replace ⇒ Electronic Catalogue of Original Parts

17 - Stop

- ❑ for the clutch pedal

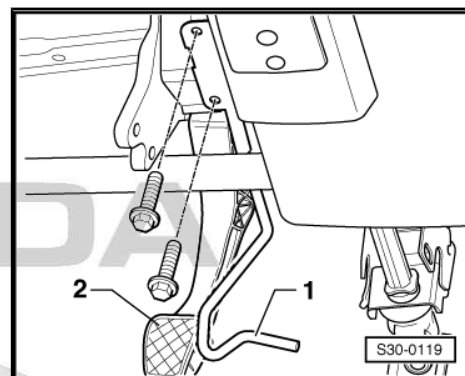
1.3 Removing and installing the over-centre helper spring

Special tools and workshop equipment required

- ◆ Release tool -T10178-

Removing

- Bracket for clutch pedal installed in the vehicle.
- Slide the driver seat to the rear.
- Remove lower part of the dash panel insert on the driver's side
⇒ Body Work ⇒ Rep. Gr. 70 .
- Unscrew crash strut -1- in front of the clutch pedal -2-.



- Unscrew clutch pedal -1- from bracket -3-, to this end release nut -2- and pull out screw -5-.



Note

The clutch pedal remains hanging on the actuating rod of the master cylinder.

- Swivel clutch pedal slightly downwards and remove over-centre helper spring -4- from the bracket.

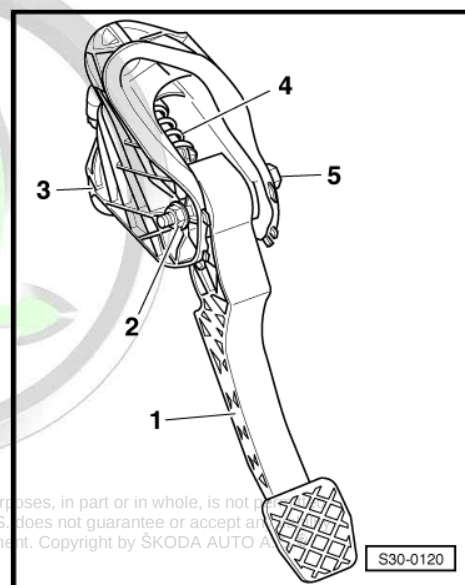
Install

Installation is performed in the reverse order, pay attention to the following points:



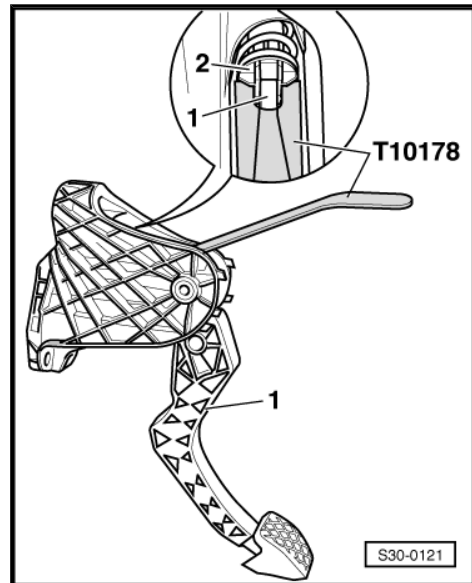
Note

Always replace self-locking nut ⇒ Electronic Catalogue of Original Parts .

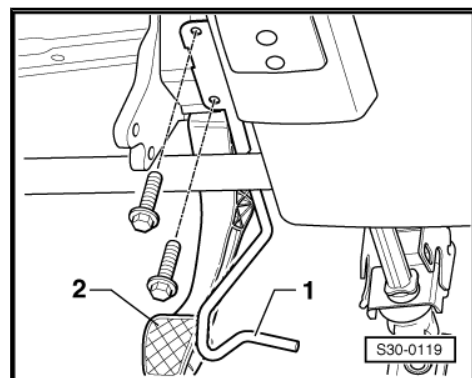


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- Insert over-centre helper spring from above into the bracket and while doing so hold the the spring end in the fitting position using the release tool -T10178- .
- Insert bearing bolt of clutch pedal into the step bearing of the over-centre helper spring.
- Press on clutch pedal slightly, slide through screw and tighten self-locking nut.



- Screw on crash strut -1- in front of the clutch pedal -2-.
- Install lower part of the dash panel insert on the driver's side
⇒ Body Work ⇒ Rep. Gr. 70 .



Tightening torque

Component	Nm
Clutch pedal to bracket	⇒ Item 16 (page 9)
Crash strut to bracket/steering column	9

1.4 Removing and installing the clutch pedal

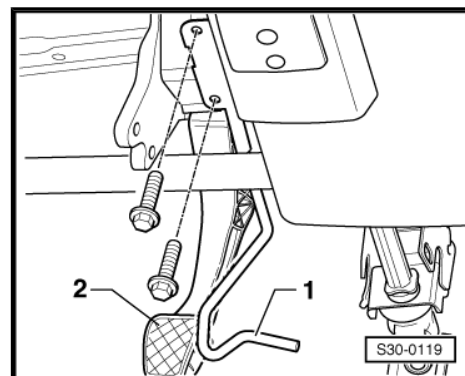
Special tools and workshop equipment required

- ◆ Pliers -T10005-
- ◆ Release tool -T10178-

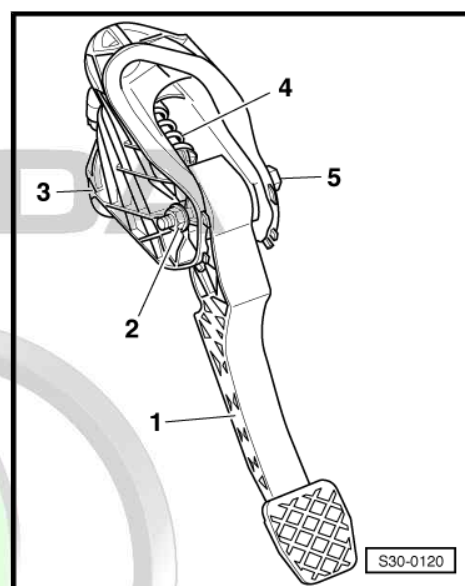
Removing

- Bracket for clutch pedal installed in the vehicle.
- Slide the driver seat to the rear.
- Remove lower part of the dash panel insert on the driver's side
⇒ Body Work ⇒ Rep. Gr. 70 .

- Unscrew crash strut -1- in front of the clutch pedal -2-.



- Unscrew clutch pedal -1- from bracket -3-, to this end release nut -2- and pull out screw -5-.
- Swivel clutch pedal slightly forwards and remove over-centre helper spring -4- from the bracket.



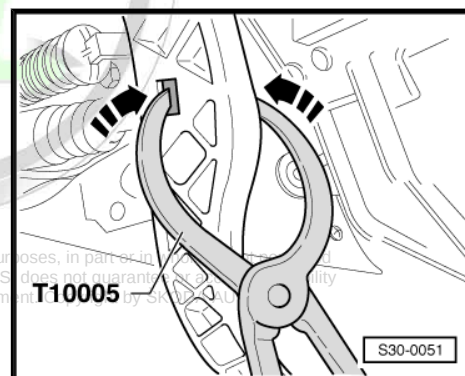
- Release support of actuating rod of master cylinder with pliers -T10005-.
- Remove clutch pedal.

Install

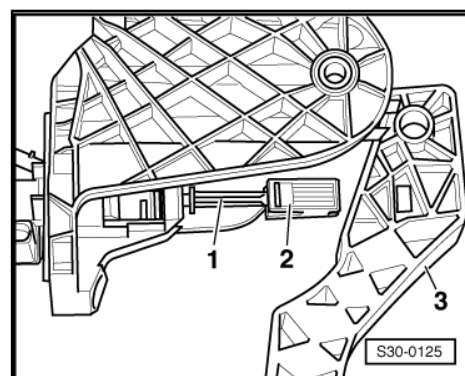
Installation is performed in the reverse order, pay attention to the following points:



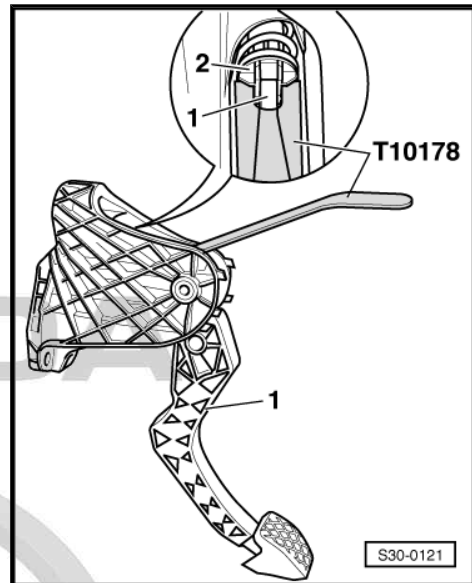
Always replace self-locking nut ⇒ Electronic Catalogue of Original Parts .



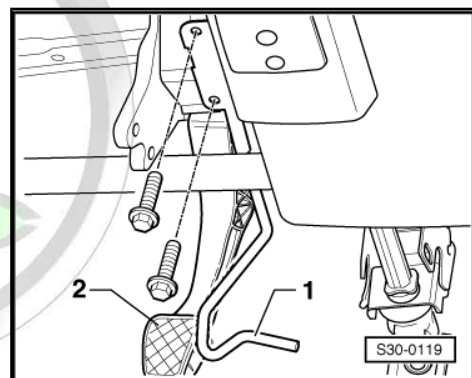
- Attach the support -2- to the actuator rod -1- of the master cylinder.
- Press support into the clutch pedal until it audibly clicks into place.



- Insert over-centre helper spring from above into the bracket and while doing so hold the the spring end in the fitting position using the release tool -T10178- .
- Insert bearing bolt of clutch pedal into the step bearing of the over-centre helper spring.
- Press on clutch pedal slightly, slide through screw and tighten self-locking nut.



- Screw on crash strut -1- in front of the clutch pedal -2-.
- Install lower part of the dash panel insert on the driver's side
⇒ Body Work ⇒ Rep. Gr. 70 .



Tightening torque

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Component	Nm
Clutch pedal to bracket	⇒ Item 16 (page 9)
Crash strut to bracket/steering column	9

1.5 Removing and installing bracket

Special tools and workshop equipment required

- ◆ Hose clamps -MP7-602 (3094)-

Removing



Note

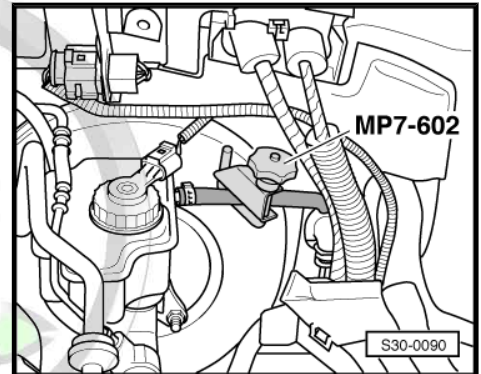
After the battery earth strap is disconnected and reconnected, carry out additional operations ⇒ Electrical System ⇒ Rep. Gr. 27 .

- Disconnect the battery-earth strap with the ignition off ⇒ Electrical System ⇒ Rep. Gr. 27 .
- Remove air filter ⇒ Engine ⇒ Rep. Gr. 24 .
- Remove battery and battery tray ⇒ Electrical System ⇒ Rep. Gr. 27 .

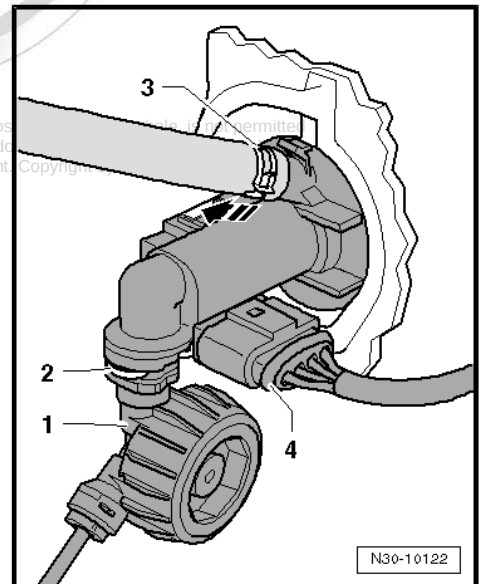
i Note

When performing the following work, make sure that no brake fluid comes into contact with the frame side rail or the gearbox. If this is the case, these points must be cleaned thoroughly.

- Pinch off return hose to master cylinder with hose clamp - MP7-602 (3094)- (if the return hose is made out of plastic, do not use the hose clamp -MP7-602-, otherwise the return hose can get damaged).



- Remove return hose -3- at master cylinder (remove plastic return hose -3- at master cylinder and close in a suitable manner).
- Unlock locking clip -2- with a screwdriver and detach tube-hose line -1- at master cylinder.
- Clip off clutch position sender -G476- at master cylinder -arrow- and remove with attached connector -4-.

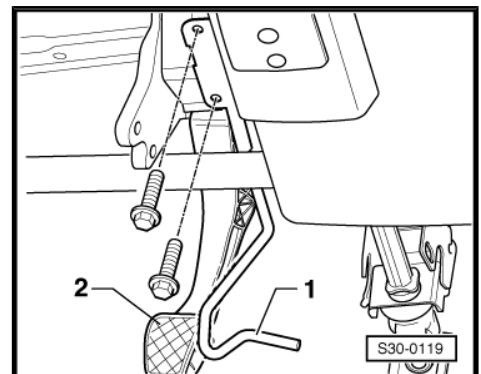


i Note

When working in the footwell, protect the floor carpet with cloths from escaping brake fluid.

- Remove lower part of the dash panel insert on the driver's side
⇒ Body Work ⇒ Rep. Gr. 70 .

- Unscrew crash strut -1- in front of the clutch pedal -2-.



- Unscrew nuts -2-.
- Remove bracket -1-.

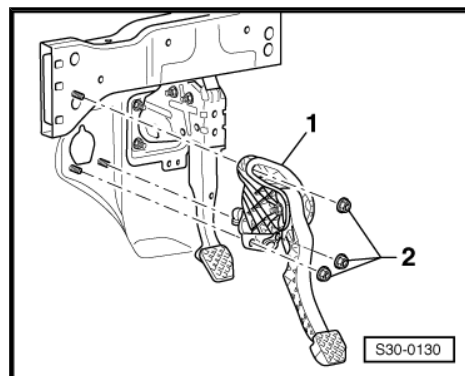
Install

Installation is performed in the reverse order, pay attention to the following points:



Note

- ♦ Replace gasket ring ⇒ *Electronic Catalogue of Original Parts*.
- ♦ Secure all hose connections with hose clamps which comply with the series design ⇒ *Electronic Catalogue of Original Parts*.



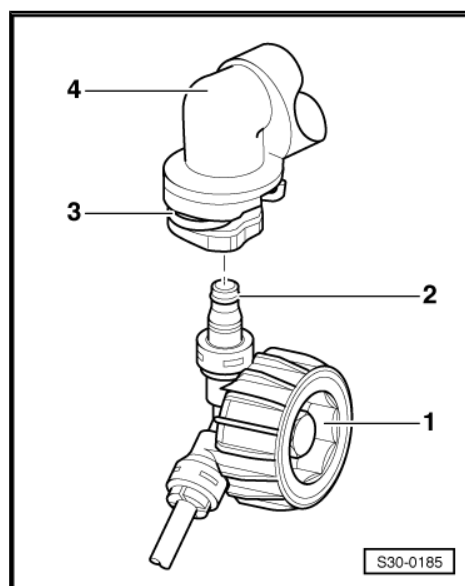
- Press in tube-hose line -1- with new gasket ring -2- onto the connection of the master cylinder -4-, until the locking clip -3- is heard to click into position.
- For testing pull on the tube-hose line.
- Bleed the clutch control ⇒ [page 27](#).
- Install battery tray and battery ⇒ Electrical System ⇒ Rep. Gr. 27.
- Install air filter ⇒ Engine ⇒ Rep. Gr. 24.



Note

After the battery earth strap is disconnected and reconnected, carry out additional operations ⇒ *Electrical System* ⇒ Rep. Gr. 27.

- Connect earth strap of battery ⇒ Electrical System ⇒ Rep. Gr. 27.



Tightening torque

Component	Nm
Bracket	⇒ Item 15 (page 8)
Crash strut to bracket/steering column	9

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1.6 Removing and installing the master cylinder

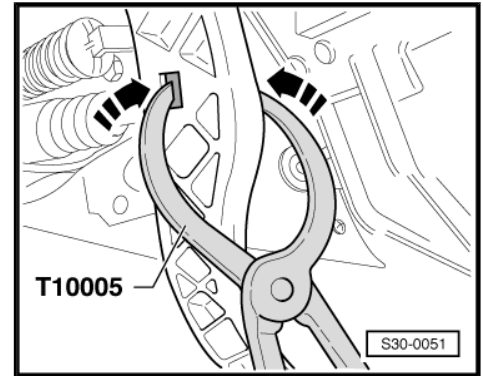
Special tools and workshop equipment required

- ♦ Pliers -T10005-

Removing

- Removing bracket ⇒ [page 12](#).

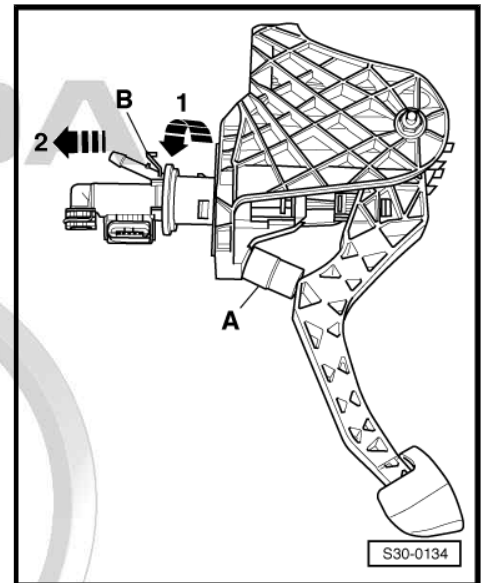
- Release support of actuating rod of master cylinder with pliers - T10005- .



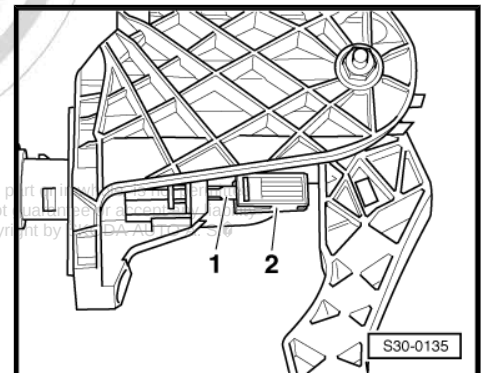
- Place a spacer -A- between clutch pedal and stop and press clutch pedal forwards.
- ◆ Length of spacer = approx. 40 mm
- Release release pin -B- and pull master cylinder out of bracket -arrow 1- and -arrow 2-.

Install

- Move clutch pedal up to the stop into home position.



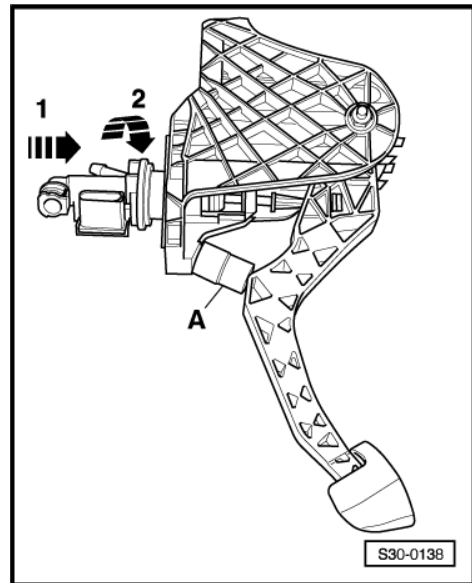
- Attach the support -2- to the actuator rod -1- of the master cylinder.



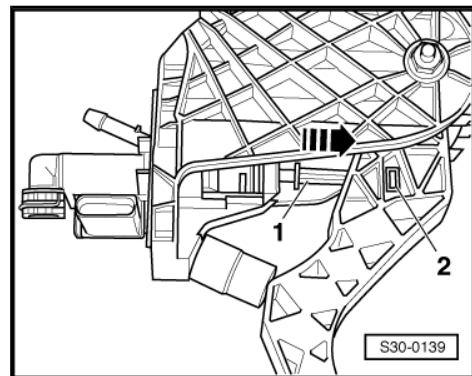
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- Place a spacer -A- between clutch pedal and stop and press clutch pedal forwards.
- ◆ Length of spacer = approx. 40 mm
- Lock master cylinder at bracket -arrow 1- and -arrow 2-.



- Press actuating rod -1- of master cylinder into direction of arrow, until the support -2- locks audibly into the clutch pedal.
- Installing bracket ➔ [page 12](#) .



1.7 Removing and installing clutch position sender -G476-

Special tools and workshop equipment required

- ◆ Hose clamps -MP7-602 (3094)-

Removing



Note

After the battery earth strap is disconnected and reconnected, carry out additional operations ➔ Electrical System ➔ Rep. Gr. 27 .

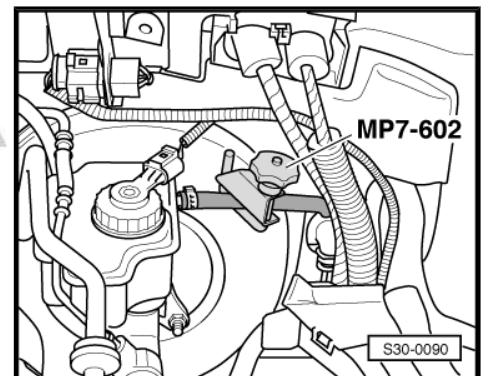
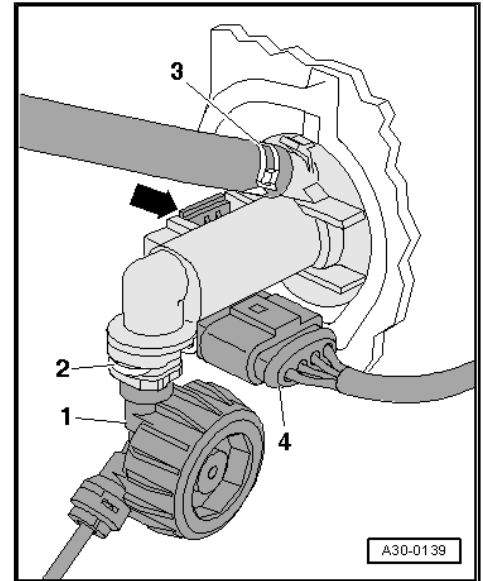
- Disconnect the battery-earth strap with the ignition off ➔ Electrical System ➔ Rep. Gr. 27 .
- Remove air filter ➔ Engine ➔ Rep. Gr. 24 .
- Remove battery, battery cover and battery tray ➔ Electrical System ➔ Rep. Gr. 27 .

If the round piece of the tube-hoseline -1- is directly installed underneath the master cylinder, this line must be removed.

i Note

When performing the following work, make sure that no brake fluid comes into contact with the frame side rail or the gearbox. If this is the case, these points must be cleaned thoroughly.

- Pinch off return hose to master cylinder with hose clamp - MP7-602 (3094)- (if the return hose is made out of plastic, do not use the hose clamp -MP7-602- , otherwise the return hose can get damaged).



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- Remove return hose -3- at master cylinder (remove plastic return hose -3- at master cylinder and close in a suitable manner).
- Unlock locking clip -2- with a screwdriver and detach tube-hose line -1- at master cylinder.
- Clip off clutch position sender -G476- at master cylinder -arrow- and remove with attached connector -4-.

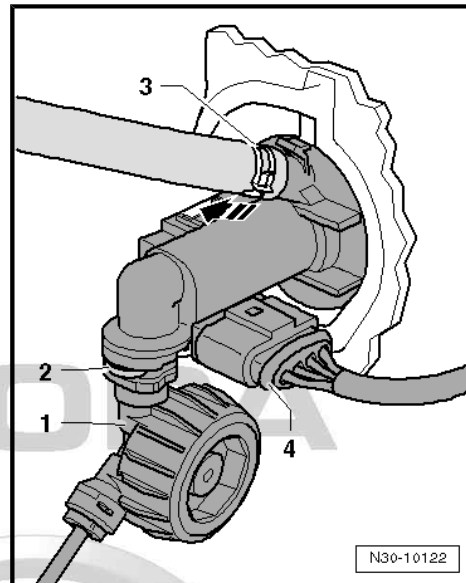
Install

Installation is performed in the reverse order, pay attention to the following points:



Note

- ♦ Replace gasket ring ⇒ *Electronic Catalogue of Original Parts*.
- ♦ Secure all hose connections with hose clamps which comply with the series design ⇒ *Electronic Catalogue of Original Parts*.



If the tube-hose line was removed:

- After installing the tube-hose line, pull on this line for checking.
- Bleed the clutch control ⇒ [page 27](#).
- Install battery tray and battery ⇒ Electrical System ⇒ Rep. Gr. 27.
- Install air filter ⇒ Engine ⇒ Rep. Gr. 24.



Note

After the battery earth strap is disconnected and reconnected, carry out additional operations ⇒ Electrical System ⇒ Rep. Gr. 27.

- Connect earth strap of battery ⇒ Electrical System ⇒ Rep. Gr. 27.

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1.8 Summary of components - Hydraulic (left-hand drive)

1 - Brake fluid reservoir

- ☐ test tightness
⇒ [page 23](#)

2 - Spring strap clamp

- ☐ not fitted to all vehicles

3 - Tubing

- ☐ to the brake fluid reservoir
- ☐ out of rubber
- ☐ on certain vehicles out of plastic ⇒ [page 20](#)
- ☐ if the intake hose is made out of plastic, do not use hose clamp - MP7-602-
- ☐ test tightness
⇒ [page 23](#)

4 - Master cylinder

- ☐ removing and installing
⇒ [page 14](#)
- ☐ test tightness
⇒ [page 23](#)
- ☐ after installing, bleed the clutch control
⇒ [page 27](#)

5 - Clamp

- ☐ to remove and install the tube-hose line pull out retaining clip up to the stop

6 - Support

- ☐ before removing and installing, separate the master cylinder from the clutch pedal ⇒ [page 10](#)

7 - Clutch pedal

- ☐ removing and installing ⇒ [page 10](#)

8 - 20 Nm

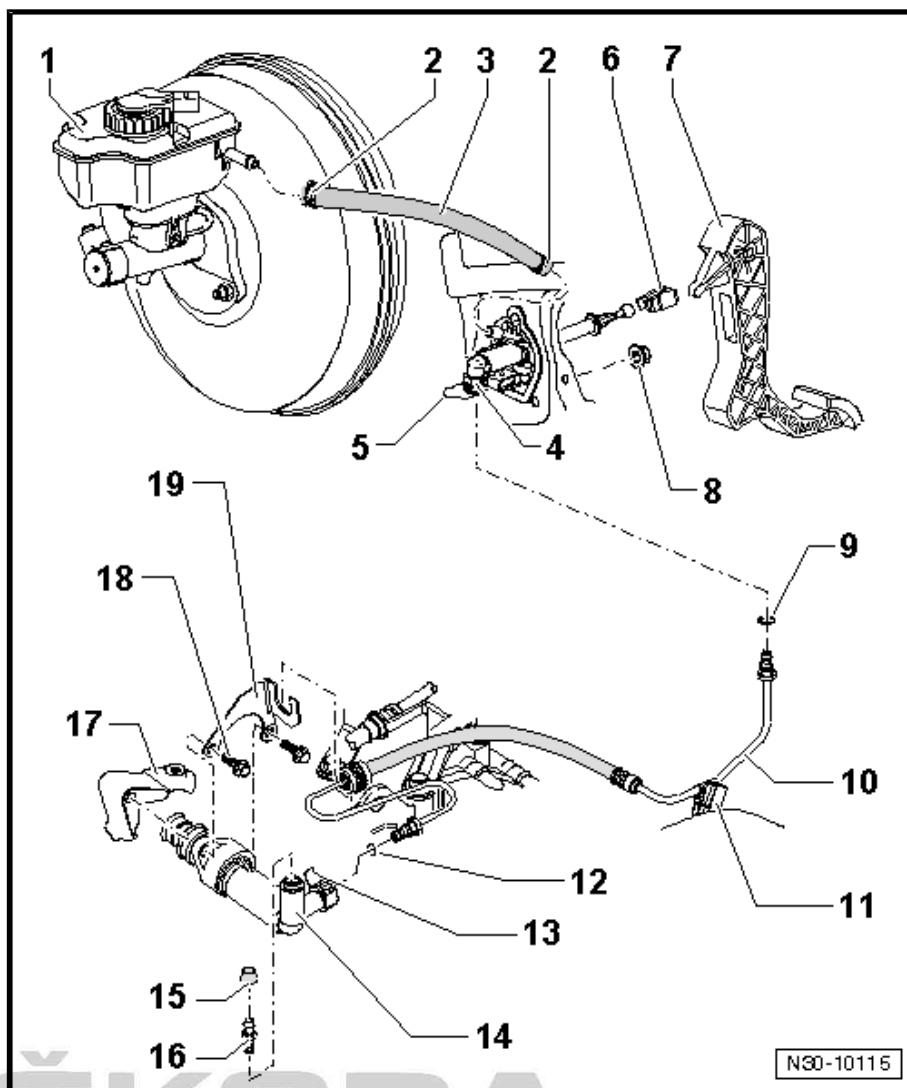
- ☐ 3 pieces
- ☐ self-locking
- ☐ for bracket on front wall
- ☐ replace ⇒ Electronic Catalogue of Original Parts

9 - Gasket ring/O-ring

- ☐ pull onto line connection
- ☐ insert with brake fluid
- ☐ Gasket rings/O-rings adapted to the material of the line connection ⇒ [page 20](#)
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ test tightness ⇒ [page 23](#)

10 - Tube-hose line

- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ Remove battery and battery tray for removing ⇒ Electrical System ⇒ Rep. Gr. 27
- ☐ test tightness ⇒ [page 23](#)



N30-10115

11 - Support

- ☐ Mount at the structure
- ☐ for tube-hose line pos. 10

12 - Gasket ring/O-ring

- ☐ pull onto line connection
- ☐ insert with brake fluid
- ☐ Gasket rings/O-rings adapted to the material of the line connection ➔ [page 20](#)
- ☐ Assignment ➔ Electronic Catalogue of Original Parts
- ☐ test tightness ➔ [page 23](#)

13 - Clamp

- ☐ to remove and install the tube-hose line pull out retaining clip up to the stop

14 - Slave cylinder

- ☐ removing and installing ➔ [page 24](#)
- ☐ test tightness ➔ [page 23](#)
- ☐ after installing, bleed the clutch control ➔ [page 27](#)

15 - Dust cap

16 - Vent valve

- ☐ Bleed the clutch control ➔ [page 27](#)
- ☐ test tightness ➔ [page 23](#)

17 - Gearbox

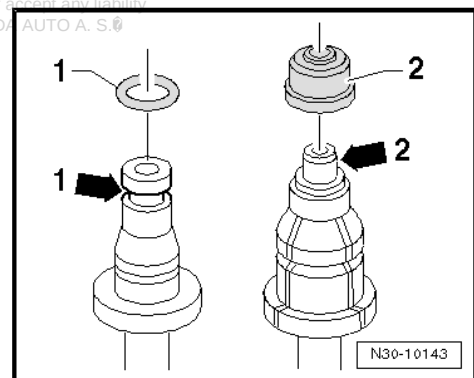
18 - 20 Nm

19 - Support

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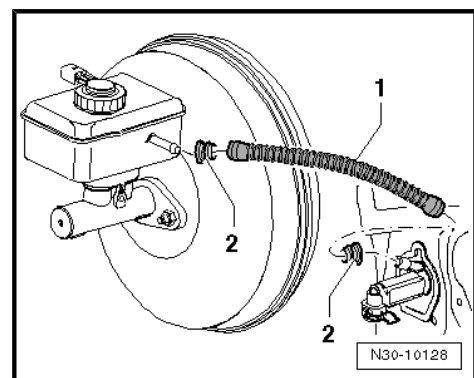
Gasket rings/O-rings for tube-hose lines

Pos.	Version of line connection
1	Line connection with circular slot -arrow 1-
2	Line connection with collar -arrow 2-



Plastic return hose -1-

- Gaskets -2- must be present in the return hose
- Do not use hose clamp -MP7-602-



1.9 Summary of components - Hydraulic (right-hand drive)

1 - Brake fluid reservoir

- ☐ test tightness
⇒ [page 23](#)

2 - Gasket

- ☐ for plastic return hose
- ☐ the gaskets must be located in the return hose

3 - Tubing

- ☐ to the brake fluid reservoir
- ☐ out of rubber
- ☐ on certain vehicles out of plastic ⇒ [page 20](#)
- ☐ if the intake hose is made out of plastic, do not use hose clamp - MP7-602-
- ☐ test tightness
⇒ [page 23](#)

4 - Master cylinder

- ☐ removing and installing
⇒ [page 14](#)
- ☐ test tightness
⇒ [page 23](#)
- ☐ after installing, bleed the clutch control
⇒ [page 27](#)

5 - Clamp

- ☐ to remove and install the tube-hose line pull out retaining clip up to the stop

6 - Gasket ring/O-ring

- ☐ pull onto line connection
- ☐ insert with brake fluid
- ☐ Gasket rings/O-rings adapted to the material of the line connection ⇒ [page 20](#)
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ test tightness ⇒ [page 23](#)

7 - Support

- ☐ before removing and installing, separate the master cylinder from the clutch pedal ⇒ [page 10](#)

8 - Clutch pedal

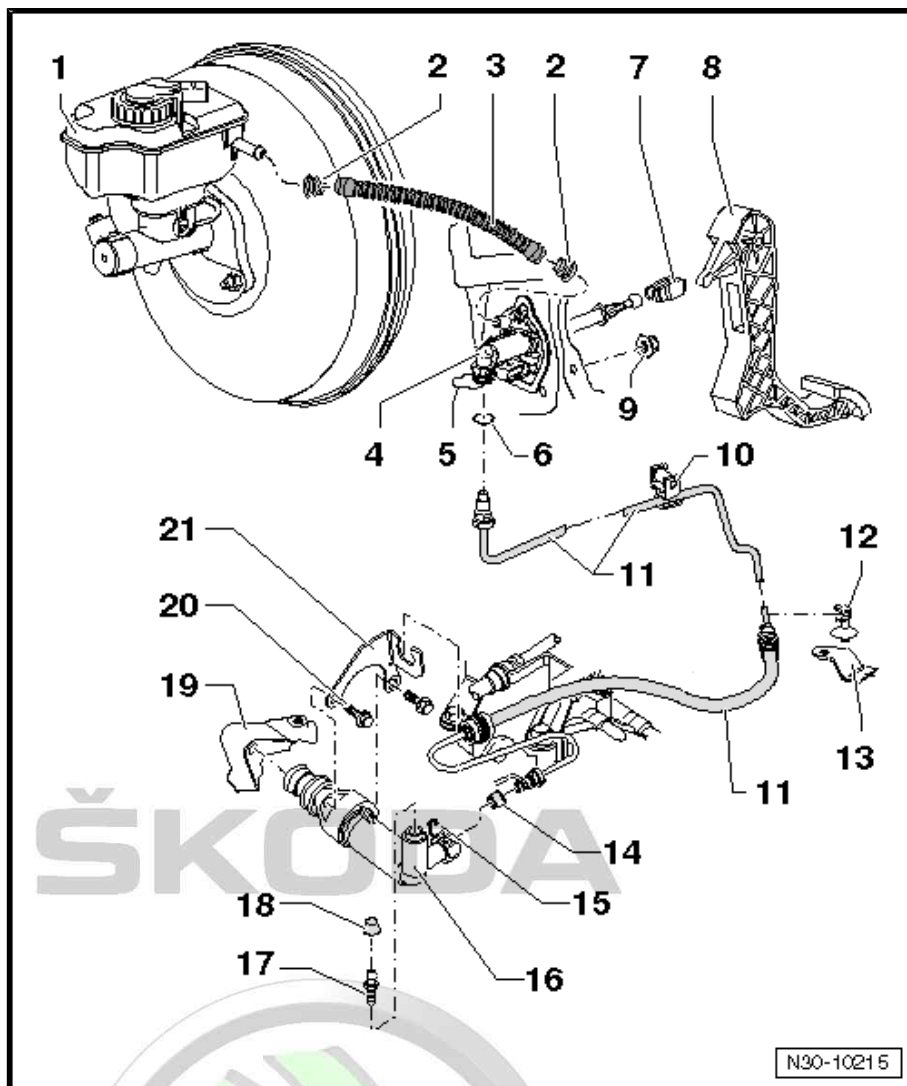
- ☐ removing and installing ⇒ [page 10](#)

9 - 20 Nm

- ☐ 3 pieces
- ☐ self-locking
- ☐ for bracket on front wall
- ☐ replace ⇒ Electronic Catalogue of Original Parts

10 - Support

- ☐ Mounted at the structure



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**11 - Tube-hose line**

- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ Remove battery and battery tray for removing ⇒ Electrical System ⇒ Rep. Gr. 27
- ☐ test tightness ⇒ [page 23](#)

12 - Support

- ☐ attached to the bracket for ABS/EDL

13 - Support

- ☐ for ABS/EDL

14 - Gasket ring/O-ring

- ☐ pull onto line connection
- ☐ insert with brake fluid
- ☐ Gasket rings/O-rings adapted to the material of the line connection ⇒ [page 20](#)
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ test tightness ⇒ [page 23](#)

15 - Clamp

- ☐ to remove and install the tube-hose line pull out retaining clip up to the stop

16 - Slave cylinder

- ☐ removing and installing ⇒ [page 24](#)
- ☐ test tightness ⇒ [page 23](#)
- ☐ after installing, bleed the clutch control ⇒ [page 27](#)

17 - Vent valve

- ☐ Bleed the clutch control ⇒ [page 27](#)
- ☐ test tightness ⇒ [page 23](#)

18 - Dust cap**19 - Gearbox****20 - 20 Nm****21 - Support**

ŠKODA



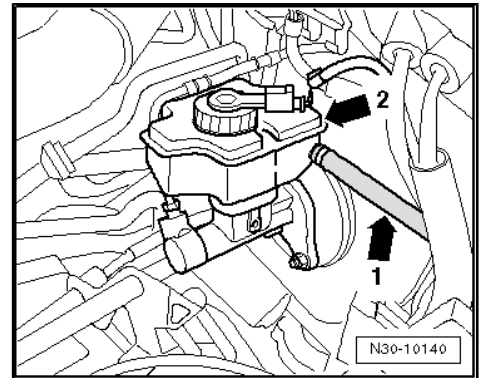
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1.10 Check hydraulic clutch control



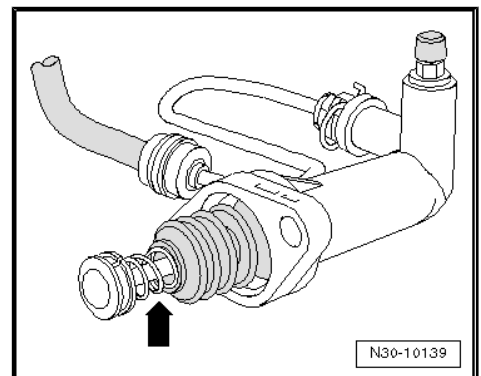
Note

- ◆ If the master cylinder and/or slave cylinder must be replaced due to the predetermined fault, first of all check the hydraulic clutch control.
- ◆ If the slave cylinder with the connected tube-hose line is removed from the gearbox, do no longer depress the clutch pedal. Otherwise, the piston can be pressed out of the slave cylinder and thus be destroyed.
- ◆ The clutch hydraulic is connected to one of the chambers -arrow 2- of the brake fluid reservoir by the return hose -arrow 1-.
- ◆ If there is no or little brake fluid in this chamber, there is a leak in the system.
- ◆ Symptoms of an external leak are, amongst others, traces of brake fluid on or below the gearbox, as well as on the noise insulation under the gearbox.
- ◆ In case of leakage, the corresponding component must be replaced ⇒ *Electronic Catalogue of Original Parts*.
- ◆ Check the correct routing of the tube-hose line between the master and slave cylinder. The line must not be kinked or trapped.
- ◆ The pedal actuation must not be obstructed by a moved or an additional foot mat.



Inspect the complete hydraulic system for leaks.

- Carry out a visual inspection of the following components of the hydraulic clutch control for leaks:
 - ◆ Check brake fluid level in the brake fluid reservoir
 - ◆ Return hose between brake fluid reservoir and master cylinder
 - ◆ Master cylinder
 - ◆ Tube-hose line between master and slave cylinder
 - ◆ Connection points (plug and screw connections) also in a non-visible area
 - ◆ Slave cylinder
- Remove the slave cylinder (do not open the line system) and check if no brake fluid drips out of the bellows, to do so remove the bellows from the rod -arrow-.
- If necessary, bleed the clutch control ⇒ [page 27](#).
- Then depress the clutch pedal carefully, at the same time hold the foot controls in 5 different positions for approx. 20s over the entire distance the pedal has to travel and check that the foot controls do not fall through on their own while being held (in 5 positions). While doing so, a second mechanic must check if fluid is leaking from the other components of the hydraulic clutch control ⇒ [page 23](#).



1.11 Removing and installing the slave cylinder

Special tools and workshop equipment required

- ◆ Hose clamps -MP7-602 (3094)-
- ◆ Grease for plug serration of clutch disc -G 000 100-



Note

- ◆ *If the slave cylinder must be replaced due to the predetermined fault, first of all check the hydraulic clutch control ➔ [page 23](#).*
- ◆ *If the slave cylinder with the connected tube-hose line is removed from the gearbox, do no longer depress the clutch pedal. Otherwise, the piston can be pressed out of the slave cylinder and thus be destroyed.*
- ◆ *When performing the following work, make sure no brake fluid comes into contact with the gearbox. If this is the case, these points must be cleaned thoroughly.*

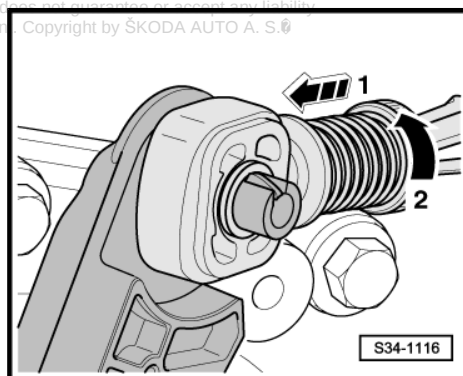
1.11.1 Removing



Note

After the battery earth strap is disconnected and reconnected, carry out additional operations ➔ Electrical System ➔ Rep. Gr. 27.

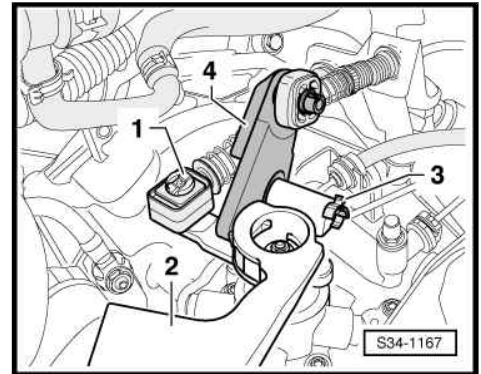
- Disconnect the battery-earth strap with the ignition off ➔ Electrical System ➔ Rep. Gr. 27.
- Remove air filter ➔ Engine ➔ Rep. Gr. 24.
- Remove battery and battery tray ➔ Electrical System ➔ Rep. Gr. 27.
- In order to avoid damage to the selector cable, the cable lock must be separated from the selector cable before removal.
- Pull forward the locking mechanism as far as the stop in -direction of arrow 1-, then lock by turning to the left in -direction of arrow 2-.



- Remove circlip -1- for shift cable from gearbox shift lever -2-.
- Pull off shift cable from the stud of the gearbox shift lever.

The relay lever -4- is secured with a clip -3- in the cover

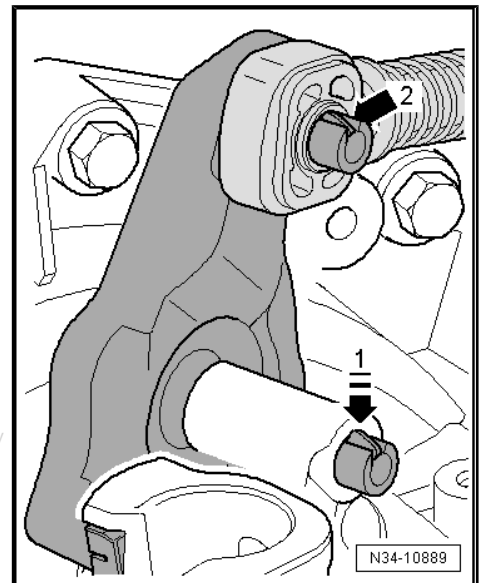
- Unclip -3- out of the hole of the relay lever and pull out relay lever -4- together with the cable lock out of the cover.



The relay lever is secured with a catch -arrow 1- in the cover

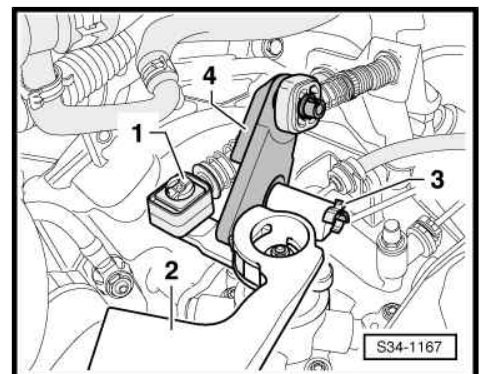
- Carefully press down the catch -arrow 1- up to the stop.
- Afterwards move relay lever in its bearing point back and forward (direction of operation). To do so, carefully pull out the relay lever together with the cable lock -arrow 2-.

Continued for all vehicles



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- Remove the gearbox shift lever -2- from the gearshift shaft.



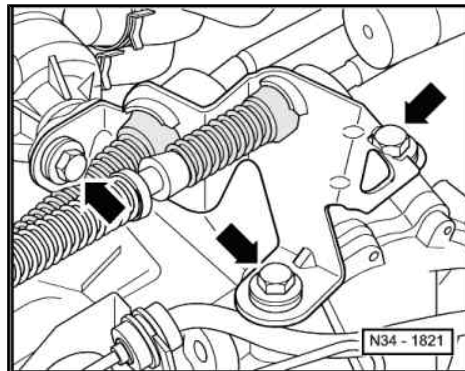
- Disconnect the Bowden cable support from gearbox -arrows-.
- Then tie up shift cable and selector cable.
- Place a non-fluffing cloth under the slave cylinder.



Note

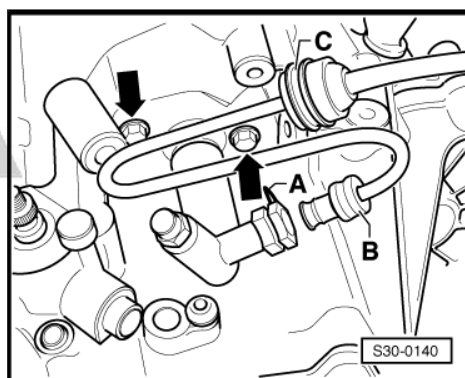
Make sure no brake fluid comes into contact with the gearbox. If this is the case, this point must be cleaned thoroughly.

- Pinch off the tube-hose line to the master cylinder with the hose clamp -MP7-602 (3094)- (if the tube-hose line to the master cylinder is made out of plastic, do not use the hose clamp -MP7-602- and after pulling out the slave cylinder, only close this line in a suitable manner).
- Pull retaining clip -A- for tube-hose line out of the slave cylinder up to the stop.
- Pull tube-hose line out of the support -C-.
- Pull tube-hose line -B- out of the slave cylinder and close openings.
- Unscrew the screws -arrows- for the slave cylinder and remove the slave cylinder.



Note

Do not depress the clutch pedal.



1.11.2 Install

Installation is performed in the reverse order, pay attention to the following points:

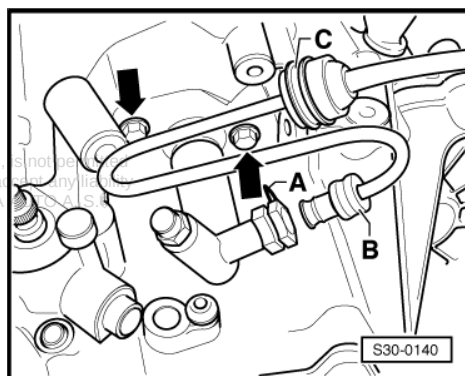
- Grease tappet head with grease for plug serration of clutch disc -G 000 100 - .
- Install slave cylinder and tighten screws -arrows- to the given tightening torque.
- Insert tube-hose line -B- into the slave cylinder up to the stop.
- Press in retaining clip -A- up to the stop and make sure the tube-hose line locks into position.
- Press tube-hose line into the support -C- at the gearbox.
- After installing the slave cylinder bleed the clutch control ➔ [page 27](#) .

Assembling gearshift mechanism ➔ [page 53](#) .

Setting the shift mechanism ➔ [page 59](#) .

- Install air filter ➔ Engine ➔ Rep. Gr. 24 .
- Install battery and battery tray ➔ Electrical System ➔ Rep. Gr. 27 .

After the battery earth strap is disconnected and reconnected, carry out additional operations ➔ Electrical System ➔ Rep. Gr. 27 .



Tightening torque

Component	Nm
Slave cylinder to gearbox	⇒ page 18
Gearbox shift lever to gearshift shaft	⇒ page 48
Cable support to gearbox	⇒ page 48

1.12 Bleed the clutch control

Special tools and workshop equipment required

- ◆ Brake filling and bleeding device - VAS 5234- or ROMESS® S15



Note

- ◆ *When performing the following work, make sure that no brake fluid comes into contact with the frame side rail or the gearbox.*
- ◆ *A pre-filling of the system is not necessary!*

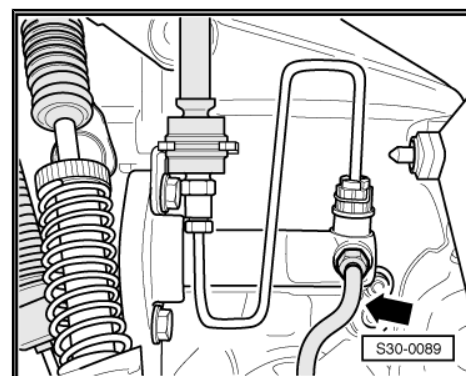
Brake fluid specification ⇒ Chassis ⇒ Rep. Gr. 00 .

– Remove air filter ⇒ Engine ⇒ Rep. Gr. 24 .

– Connect the brake filling and bleeding device .

To bleed, use the bleeder hose -arrow-.

- Connect bleeder hose -arrow- with the drip bottle of the brake bleeding device.
- Fit the bleeder hose -arrow- onto the vent valve.
- Activate system with a pressure of 0.2 MPa (2 bar).
- Open vent valve.
- Allow approx. 100 cm³ of brake fluid to flow out until no more air bubbles are visible.
- Close vent valve.
- Activate foot controls forcefully from stop to stop between 10 and 15 times.
- Activate system with a pressure of 0.2 MPa (2 bar).
- Open vent valve.
- Allow approx. 50 cm³ more brake fluid to flow out.
- Close vent valve.
- After completing the bleeding procedure operate the clutch pedal repeatedly.
- Install air filter ⇒ Engine ⇒ Rep. Gr. 24 .



2 Repairing clutch control

Special tools and workshop equipment required

- ◆ Grease for plug serration of clutch disc -G 000 100-

1 - Release bearing

- ☐ Do not wash the bearing, just wipe clean
- ☐ replace noisy bearings ⇒ Electronic Catalogue of Original Parts
- ☐ removing and installing ⇒ [page 29](#)
- ☐ remove and install together with the clutch release lever Pos. 3 and guide bushing Pos. 5 ⇒ [page 29](#)

2 - 5 Nm and torque a further 90°

- ☐ always replace ⇒ Electronic Catalogue of Original Parts

3 - Clutch release lever

- ☐ remove and install together with the release bearing Pos. 1 and guide bushing Pos. 5 ⇒ [page 29](#)
- ☐ Original grease must be removed from the contact surface of the clutch release lever
- ☐ grease contact surface on the ball stud with grease -G 000 100-

4 - Retaining spring

- ☐ attach to clutch release lever

5 - Guide bushing

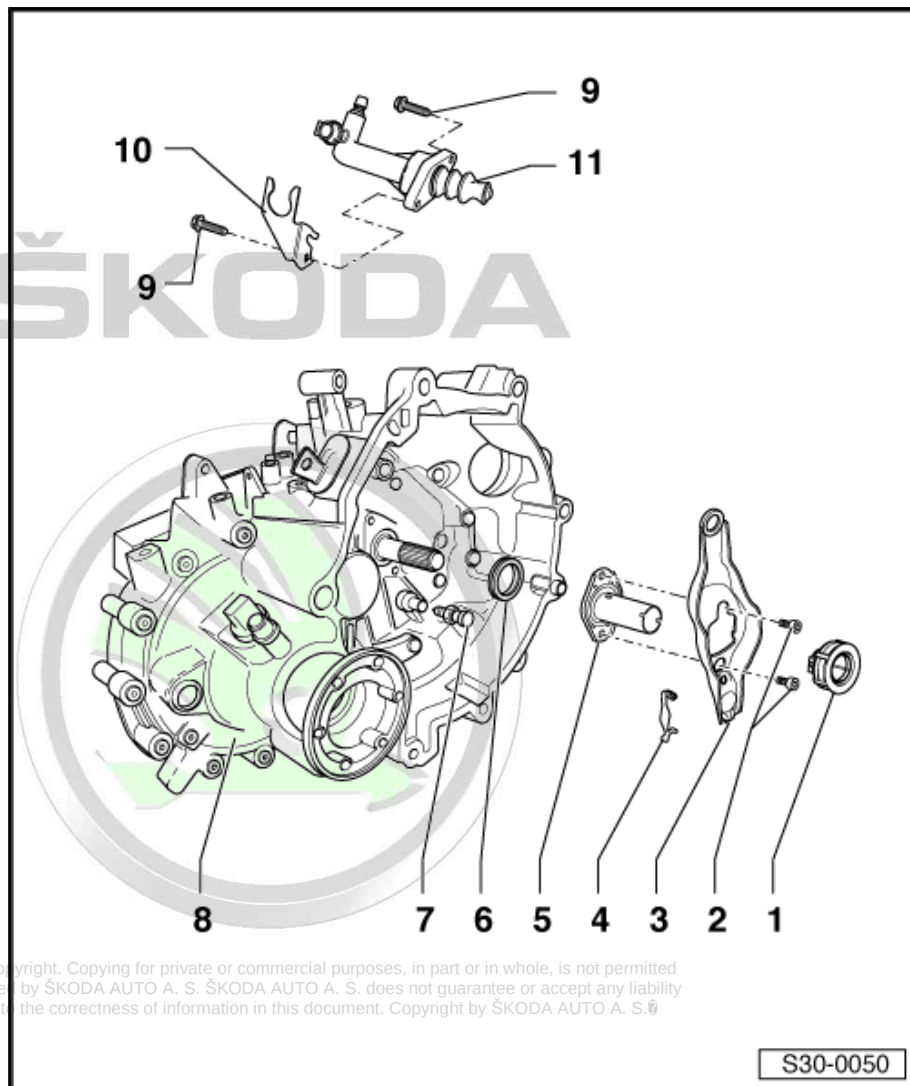
- ☐ for release bearing
- ☐ removing and installing ⇒ [page 29](#)
- ☐ remove and install together with the clutch release lever Pos.3 and release bearing Pos. 1 ⇒ [page 29](#)
- ☐ grease guide bushing in the area of the release lever with grease -G 000 100-

6 - Gasket ring for drive shaft

- ☐ removing and installing ⇒ [page 88](#)
- ☐ replace ⇒ Electronic Catalogue of Original Parts

7 - Ball stud, 20 Nm

- ☐ Original grease must be removed from the contact surface of the clutch release lever
- ☐ grease with grease for plug serration of clutch disc -G 000 100-





8 - Gearbox

9 - 20 Nm

10 - Support

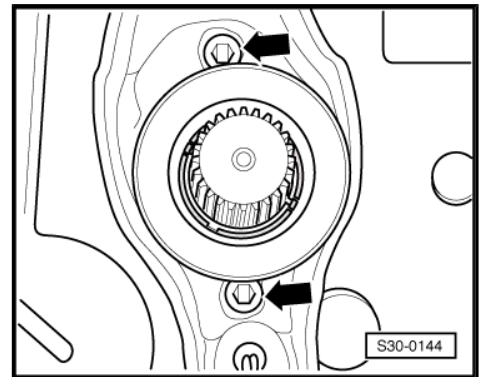
11 - Slave cylinder

- ☐ removing and installing ⇒ [page 24](#)
- ☐ Grease tappet head with grease for plug serration of clutch disc -G 000 100-

Remove and install the clutch release lever together with the release bearing and guide bushing

- Release screws -arrows-.
- Separate the clutch release lever together with the release bearing and guide bushing from the drive shaft and ball stud.

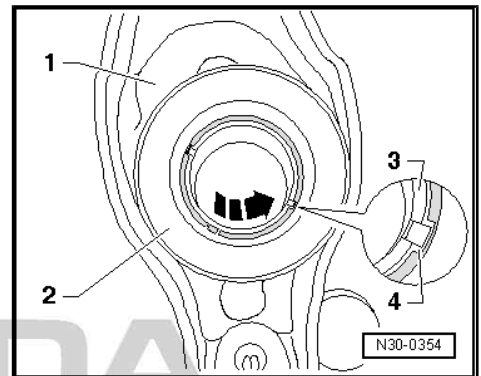
Installation is carried out in the reverse order.



Removing and installing the guide bushing

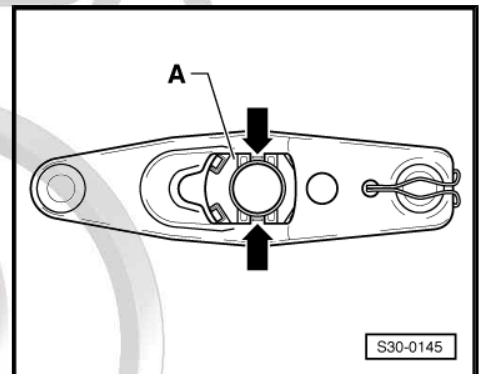
- Rotate the guide bushing -3- opposite the release bearing -2- 90° in the direction of the arrow until the catch pegs of the guide bushing fit into the slots -4- of the clutch release bearing.
- In this position remove the guide bushing from the release bearing.

Installation is carried out in the reverse order.



Removing and installing the release bearing

- Press the catch pegs -arrows- together and remove the release bearing -A- from the clutch release lever.
- To install, press the release bearing -A- into the clutch release lever until the catch pegs -arrows- lock into position.





3 Repairing clutch

Special tools and workshop equipment required

- ◆ Counterholder -MP1-223 (3067)-
- ◆ Centering mandrel -T10086-
- ◆ Grease for plug serration of clutch disc -G 000 100-

3.1 Summary of components - repairing the clutch



Note

- ◆ *Before replacing the clutch disc and pressure plate fault finding power transmission - observe complaints of the clutch and clutch control ⇒ [page 33](#) .*
- ◆ *Check whether the dowel sleeves for centering the gearbox are present in the cylinder block, insert if necessary.*
- ◆ *If the dowel sleeves are not present, this can result in difficulties to shift, clutch problems and if necessary noises from gearbox (gear rattling).*
- ◆ *Replace the clutch discs and pressure plates if the riveting is damaged or loose.*
- ◆ *Assign the clutch disc and pressure plate via the ⇒ Electronic catalogue of original parts and in accordance with the engine identification characters.*

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1 - Flywheel

- ☐ make sure the centering pins are tight
- ☐ The locating face for the clutch lining must be free from grooves, oil and grease
- ☐ removing and installing
⇒ Engine ⇒ Rep. Gr. 13

2 - Clutch disc

- ☐ Assignment ⇒ Electronic Catalogue of Original Parts
- ☐ Fitting position: the spring cage points towards the pressure plate
- ☐ the logo "gearbox side" always points towards the pressure plate and the gearbox
⇒ [page 32](#)
- ☐ center ⇒ [page 33](#)
- ☐ slightly grease the serration

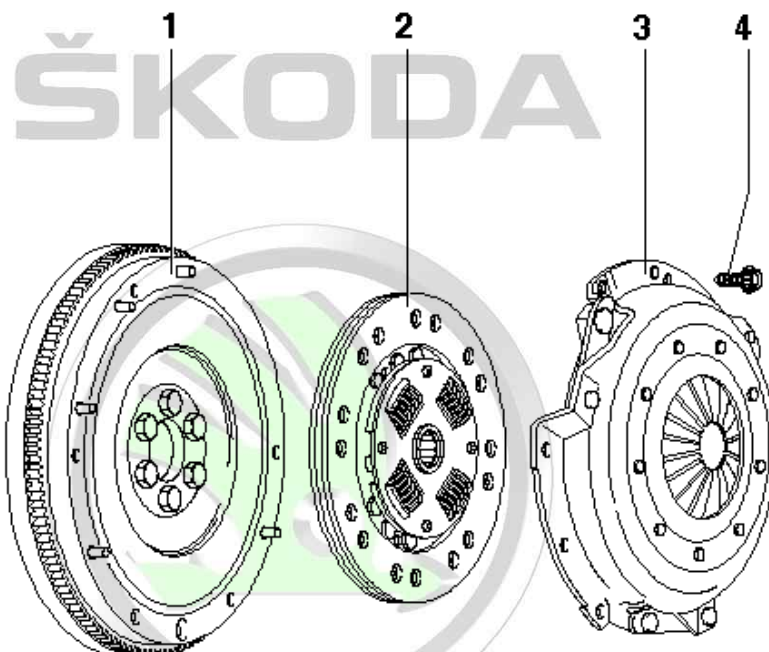


Note

- ◆ *Clean the drive shaft serration and hub serration on used clutch discs. Remove corrosion and only apply a very thin layer of grease for plug serration of clutch disc -G 000 100- on the drive shaft serration.*

- ◆ *Subsequently move the clutch disc up and down on the drive shaft until the hub fits smoothly on the shaft.*

- ◆ *Remove all excess grease.*



A30-0064

3 - Pressure plate

- ☐ removing and installing ⇒ [page 33](#)
- ☐ Check the extremities of the membrane springs ⇒ [page 32](#)
- ☐ Check feather joints and riveted joints ⇒ [page 32](#)



Note

The pressure plates are protected against corrosion and are greased. Only clean the thrust surface as otherwise the life of the clutch may be considerably reduced.

4 - Screw

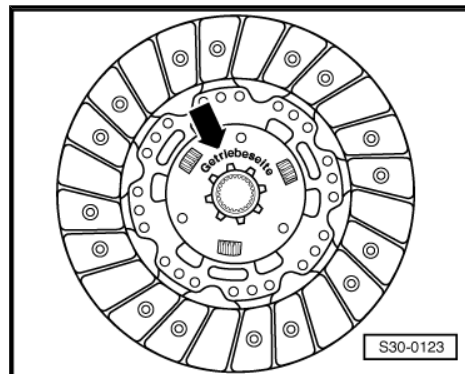
- ☐ M6 = 13 Nm
- ☐ M7 = 20 Nm
- ☐ assign via ⇒ Electronic Catalogue of Original Parts



- ❑ Release or tighten gradually and crosswise

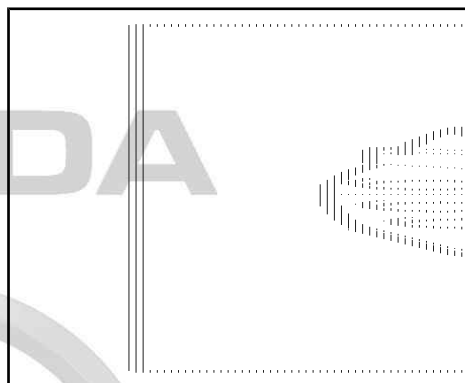
Fitting location of clutch disc

- Legend "side of gearbox" points to the gearbox.



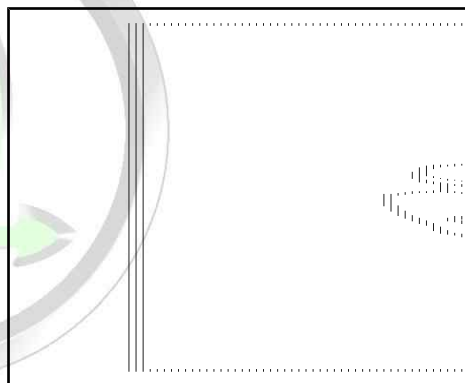
Check the extremities of the membrane springs

- Wear is allowed up to half the membrane spring thickness -arrows-.



Check feather joints and riveted joints

- Check the feather joints between pressure plate and cover for cracks as well as the riveted joints for firm seating -arrows-.



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3.2 Removing and installing clutch

Removing

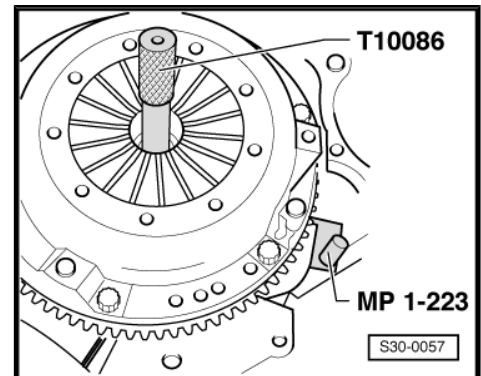
- Removing the gearbox ⇒ [page 62](#) .

In order to avoid a deformation of the pressure plate when removing it (this leads to jerking during start-up), the pressure plate must be loosened as follows:

- Insert counterholder -MP1-223 (3067)- to slacken and tighten the bolts.
- Release bolts in small stages crosswise.
- Remove pressure plate and clutch disc.

Install

- Fit the pressure plate onto the centering pins of the flywheel.



Note

The thrust surface of the pressure plate and the clutch disc lining must fully rest against the flywheel before the screws are inserted.

- Screw in all the screws by hand uniformly, until the bolt head rests against the pressure plate.
- Tighten the screws in small stages crosswise (tightening torque ⇒ [page 30](#)), so as not to damage the centering holes on the pressure plate and the centering pins of the flywheel.
- Installing the gearbox ⇒ [page 68](#) .

3.3 Fault finding power transmission - problems with the clutch and clutch control



Note

Check hydraulic clutch control ⇒ [page 23](#) .

Before each clutch repair, examine and reconstruct the complaint of the customer. During this procedure, it must be determined if indeed there is a fault of the clutch or if the cause is only an incorrect setting of the shift mechanism.

Fault	Fault description	Measure
Clutch pedal does not return to initial position.	♦ Air in line system;	– Vent air from the line system; top up with brake fluid.
	♦ Line system, master or slave cylinder leaking.	– Replace defective component, vent air from the line system; top up with brake fluid.
	♦ Release bearing on the guide bushing is tilted, seized.	– Replace guide bushing and release bearing.
	♦ Membrane spring of the pressure plate broken.	– Replace pressure plate.



Fault	Fault description	Measure
Actuating force on the clutch pedal too high.	◆ Over-centre helper spring defective.	– Replace over-centre helper spring.
	◆ Clutch release force increased due to wear of clutch linings.	– Inform customer (higher release force with increased wear). – Replace the clutch disc if the distance base of the rivet is below 0.1 mm.
	◆ Release bearing on the guide bushing is tilted, seized.	– Replace defective components.
	◆ Pressure plate with wrong spring identification.	– Assign pressure plate via the → Electronic catalogue of original parts .
	◆ Mechanical fault of the pressure plate/clutch disc.	– Replace defective components.
	◆ Clutch disc on the serration sluggish/jams.	– Check serration of the hub for damage (burrs), if necessary replace clutch disc. – Clean the hub and the drive shaft serration from corrosion and residues of lubricant and grease with grease for plug serration of clutch disc - G 000 100- . Move clutch disc back and forth, remove excess grease.

Fault	Fault description	Measure
Noises when depressing the clutch.	◆ Release bearing defective, guide of clutch release bearing not in order, contact surface worked-in.	– Always replace noisy release bearings. – Replace guide bushings if damaged.
	◆ The contact surface of the pressure plate is defective (the tips of the membrane spring are bent, broken). Release bearing is off-center.	– Replace pressure plate. – Check release bearing, guide bushing, replace if necessary. – Check position of release lever. – Check dowel sleeves.
	◆ Centre displacement of engine/gearbox.	– Check dowel sleeves.
	◆ Clutch disc installed the wrong way up.	– Correct installation.
	◆ Wrong clutch disc installed.	– Assign clutch disc via the → Electronic catalogue of original parts .



Fault	Fault description	Measure
Scratch noises when either forward or reverse gear is engaged, gearshift jams, hooks, is sluggish, shifting not possible, clutch without operation.	♦ Air in the system, clutch does not separate fully.	– Bleed system; check system, top up with brake fluid.
	♦ Master/slave cylinder, line is leaking.	– Replace defective part, top up with brake fluid, bleed system.
	♦ The travel of the clutch pedal is not sufficient (carpet, foot mat under the foot controls), clutch is not fully depressed.	– Inform customer.
	♦ Pressure plate uneven due to incorrect installation, clutch disc warped due to improper handling.	– Inspect parts, if necessary replace, observe position of the centering pins. – If scratching still occurs after the drive shaft serration, check the clutch disc for smooth running, if necessary repair the gearbox.
	♦ Tips of membrane spring broken or bent (assembly fault, release bearing moves off-center).	– Replace pressure plate. – Check release bearing, guide bushing, replace if necessary. – Check dowel sleeves.
	♦ Clutch disc too thick.	– Assign clutch disc via the ⇒ Electronic catalogue of original parts .
	♦ Lining glued to the flywheel (long immobilization time, high humidity).	– Slightly rub down friction surfaces of the clutch linings or replace completely the severely corroded parts.
	♦ Clutch disc on the serration sluggish/jams. Corroded hub, damaged during assembly. Hub profile knocked out on one side.	– Check serration of the hub for damage, if necessary replace clutch disc. – Remove corrosion from the hub and the shaft as well as residues of lubricant. Grease shaft with grease for plug serration of clutch disc -G 000 100- . – Move clutch disc back and forth, remove excess grease. – Check position of dowel sleeves on knocked out hub profile. – Check release bearing, guide bushing and pressure plate, replace if necessary.
	♦ Lifting of pressure plate too low (wrong pressure plate installed).	– Assign pressure plate via the ⇒ Electronic catalogue of original parts .
	♦ Displacement of engine/gearbox too large (dowel sleeves missing), support panel of clutch plate bent through this.	– Insert dowel sleeves before gearbox has been fitted. – Check clutch disc and pressure plate for damage, if necessary replace.



Fault	Fault description	Measure
	◆ Linings spalled off because of too high revs (shift back during too high speed). ◆ When starting, linings are spalled off through slipping for too long a time.	– Replace clutch disc. Inform customer.

Fault	Fault description	Measure
Load change jolts when throttle is depressed and sudden reduction of the engine speed.	◆ Suspension assembly too soft.	– Inform customer. Assign hanger via the ⇒ Electronic Catalogue of Original Parts replace if necessary.
	◆ Irregular engine running.	– Check engine setting, correct.
	◆ Clutch disc with noise insulation of the loose wheels.	– Inform customer.
	◆ Centre displacement of engine/gearbox.	– Test dowel sleeves, replace if necessary.

Fault	Fault description	Measure
Clutch slips through, no or bad pre-drive.	◆ Wrong clutch disc, wrong pressure plate installed.	– Assign the clutch disc and pressure plate via the ⇒ Electronic catalogue of original parts .
	◆ Clutch disc is worn out, burnt, pressure plate overheated, scoring, pressure plate warped through incorrect assembly, contact pressure of the pressure plate too low, driving error, natural wear.	– Replace clutch disc. – Replace pressure plate. – Inform customer.
	◆ Clutch disc, pressure plate, flywheel oily. Shaft seals of engine or gearbox defective. Grease on the contact surfaces through excess greasing of the hub.	– Replace clutch disc. – Clean contact surfaces of pressure plate and flywheel. – Replace radial shaft seal, remove excess grease from the drive shaft.
	◆ Clutch disc installed the wrong way up.	– Correct installation, check clutch disc, replace if necessary.
	◆ Flywheel depth too large or excess removal at the base of the thrust surface.	– Assign the sealing flange via the ⇒ electronic catalogue of original parts . – Inspect clutch disc, pressure plate, replace if necessary.
	◆ Slave cylinder leaking.	– Replace slave cylinder.

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Fault	Fault description	Measure
Clutch grabbing, unit shaking.	♦ Air in the system.	– Bleed system, check brake fluid level, check system for tightness. – Replace defective part.
	♦ Engine does not run clean.	– Check engine setting, correct.
	♦ Driving error, starting speed is too low.	– Inform customer.
	♦ Wrong clutch disc installed.	– Assign clutch disc via the ⇒ Electronic catalogue of original parts .
	♦ Assembly bearing too soft, knocked out.	– Check assembly bearing, if necessary assign via the ⇒ Electronic Catalogue of Original Parts .
	♦ Clutch lining, contact surface of pressure plate and flywheel oily (oil leakage from the clutch housing).	– Check radial shaft seal of the drive shaft for clutch or check crankshaft, if necessary replace. – Replace clutch disc, clean pressure plate and flywheel.
	♦ Release bearing on the guide bushing is tilted, seized (presses on one side onto the membrane spring of the pressure plate).	– Replace release bearing and guide bushing. – Check control element and bearing for control elements.
	♦ The contact surface of the pressure plate lifts off only unilaterally due to the tilted release bearing. ♦ Housing of the pressure plate warped when installed. Contact surface of the pressure plate lifts off only unilaterally.	– Check the contact surface of the clutch lining at the flywheel, check pressure plate and membrane spring, replace pressure plate if necessary. – Replace release bearing and guide bushing.
	♦ Drive shaft too heavily greased (traces of grease on the clutch disc, pressure plate and flywheel).	– Clean pressure plate and flywheel free of grease, replace in the event of damage (rattle markings, traces of overheating, scoring). – Remove traces of grease from hub and shaft, grease shaft lightly with grease for plug serration of clutch disc - G 000 100- . – Move clutch disc back and forth, remove excess grease.

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Fault	Fault description	Measure
Acoustic knock "Klack" when coupling.	♦ Carrier earth/drive shaft is accelerated with sudden coupling. The drive shaft serration of the pinions in mesh knocks; for clutch discs with predamper the noise increases as the predamper reaches the stop.	– Inform customer.

Fault	Fault description	Measure
Noises in idle.	♦ Torsional damper spring broken.	– Replace clutch disc.
	♦ Clutch disc without predamper installed (idle rattling).	– Assign clutch disc via the → Electronic catalogue of original parts .
	♦ Pressure plate warped, broken, imbalance.	– Replace pressure plate.
	♦ Irregular engine running.	– Check engine setting, correct if necessary.
	♦ Displacement of engine/gearbox too large (dowel sleeves missing).	– Insert dowel sleeves before gearbox has been fitted.
	♦ Intermediate plate grinds at flywheel.	– Insert intermediate plate on sealing flange and push onto the dowel sleeves.

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34 – Control, housing

1 Repairing shift mechanism

1.1 Fitting location of shift mechanism

-Arrow A- Shift movement

-Arrow B- Selector movement

A - Shift cable

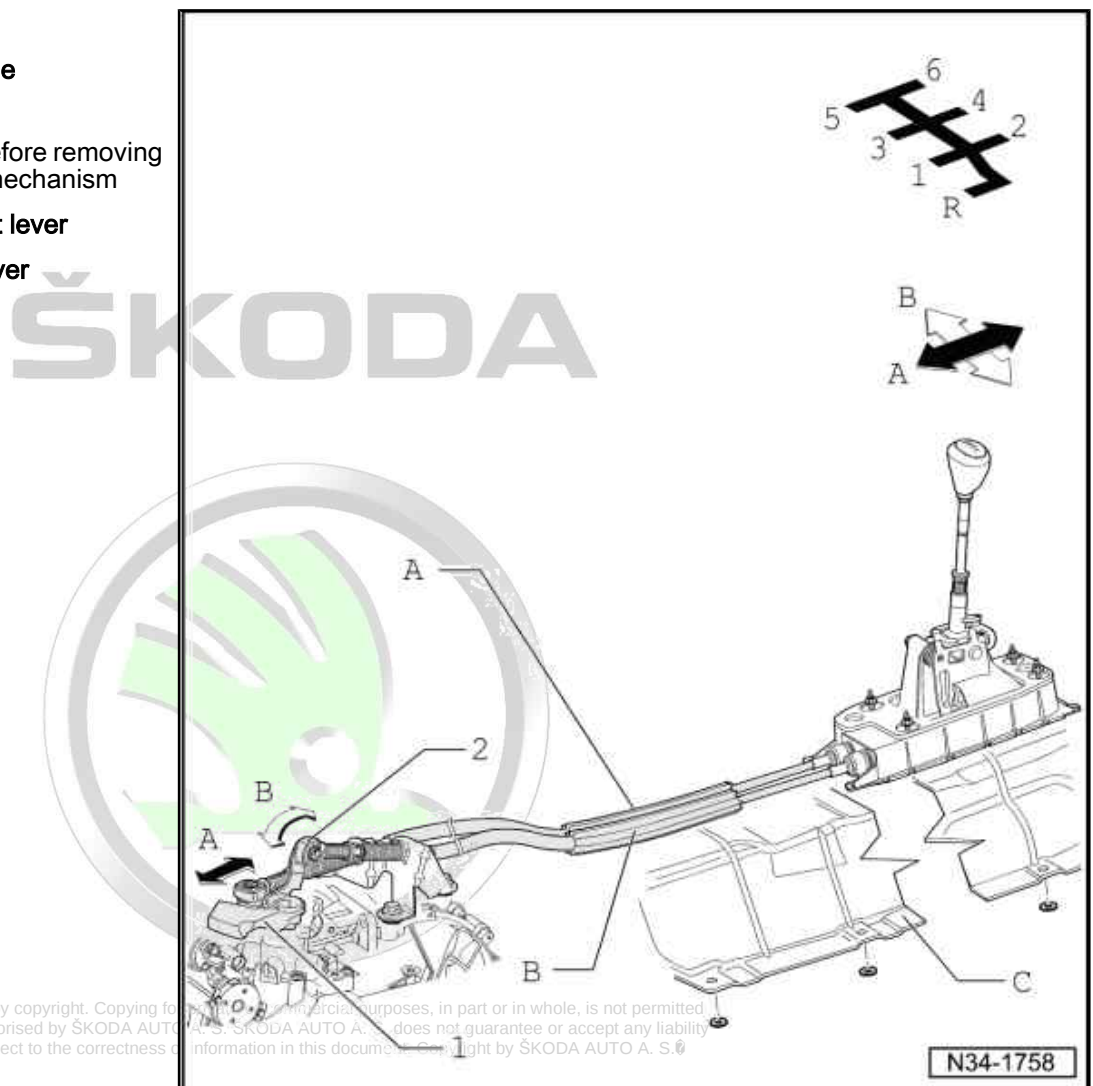
B - Selector cable

C - Heat shield

- ☐ take off before removing the shift mechanism

1 - Gearbox shift lever

2 - Reversing lever





1.2 Summary of components



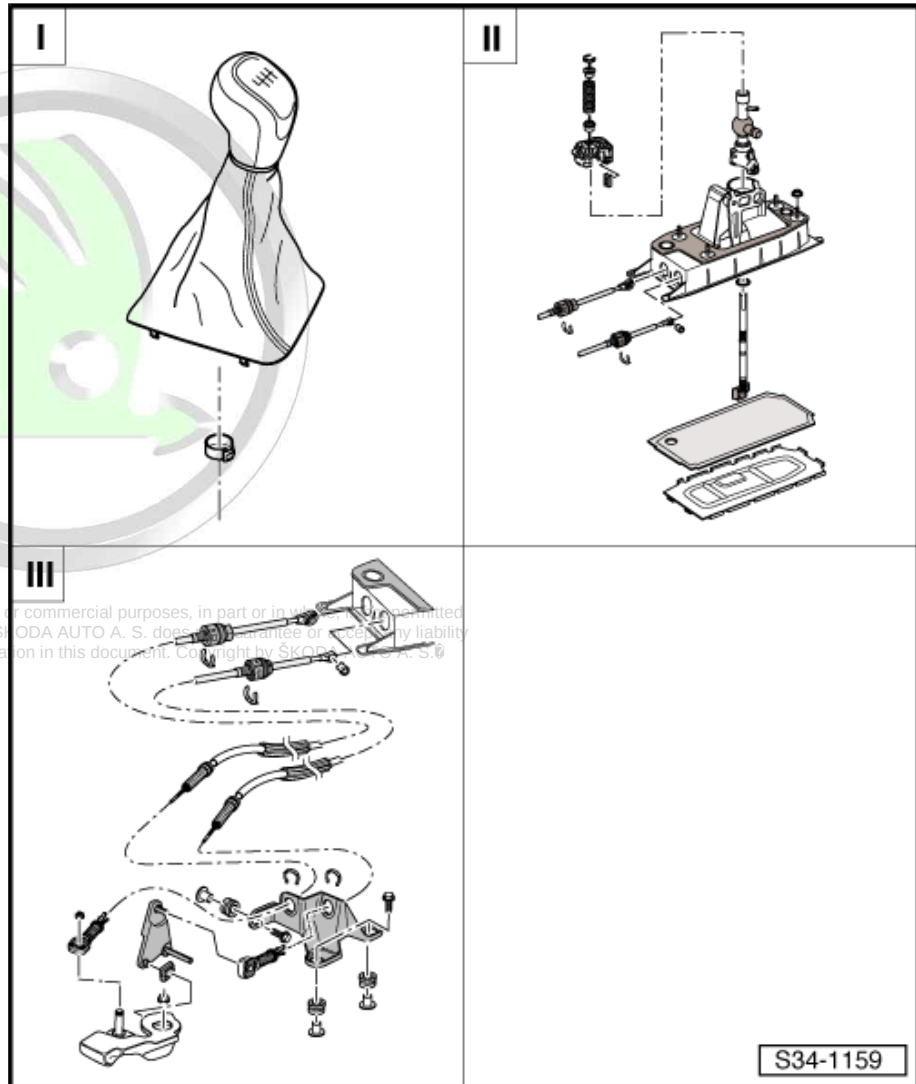
Note

- ◆ After the battery earth strap is disconnected and reconnected, carry out additional operations ⇒ *Electrical System* ⇒ Rep. Gr. 27.
- ◆ Remove shift mechanism for replacing control cables ⇒ [page 53](#).
- ◆ Do not kink the control cables.

I - Summary of components -
Gearshift knob with collar
⇒ [page 41](#).

II - Summary of components -
Gearshift mechanism
⇒ [page 42](#).

III - Summary of components -
Control cables ⇒ [page 48](#).



1.3 Summary of components - Gearshift knob with collar

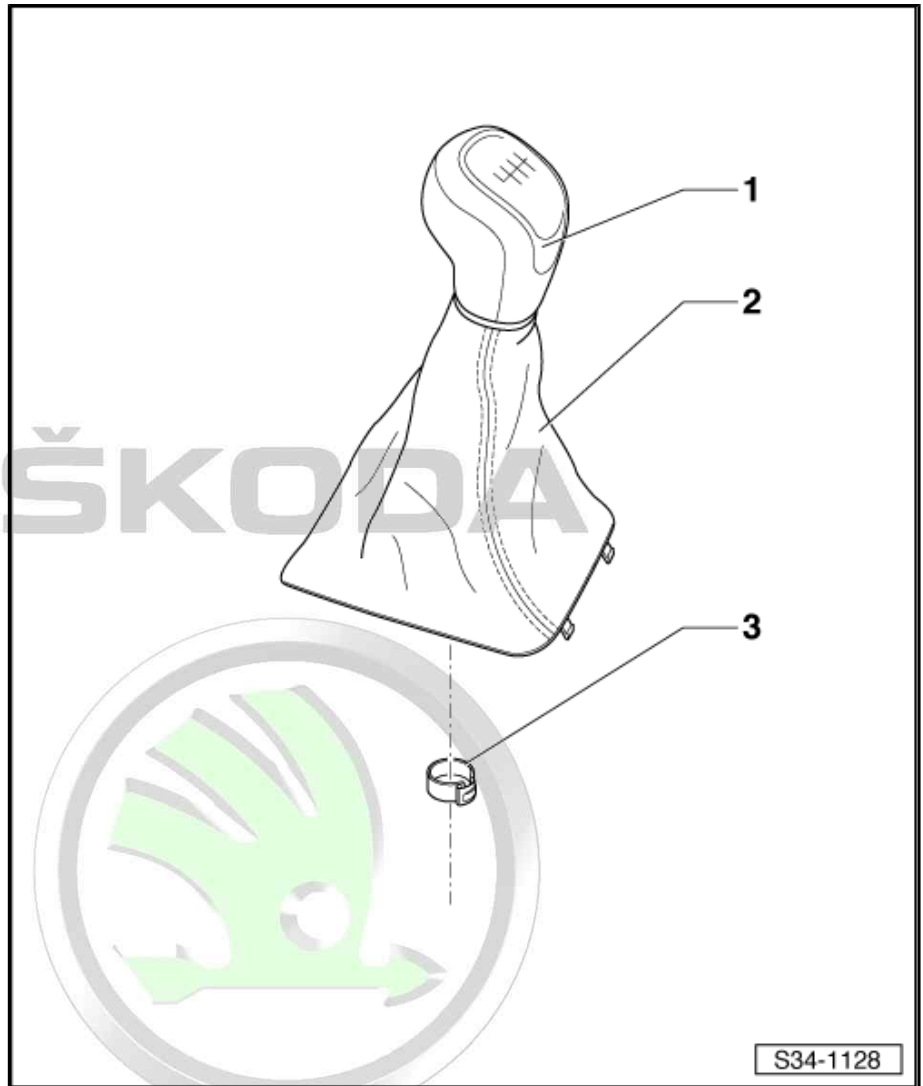
1 - Gearshift knob

- ☐ with collar
- ☐ The gearshift knob and collar can be separated from each other (when separating, the catch ring is damaged)
- ☐ Plaque of gearshift lever can only be separated from the gearshift knob e.g. with a screwdriver.
- ☐ removing and installing
⇒ [page 41](#)
- ☐ Assignment ⇒ Electronic Catalogue of Original Parts

2 - Collar

3 - Open warm-type clamp

- ☐ for securing the gearshift knob to the gearshift lever
- ☐ always replace ⇒ Electronic Catalogue of Original Parts

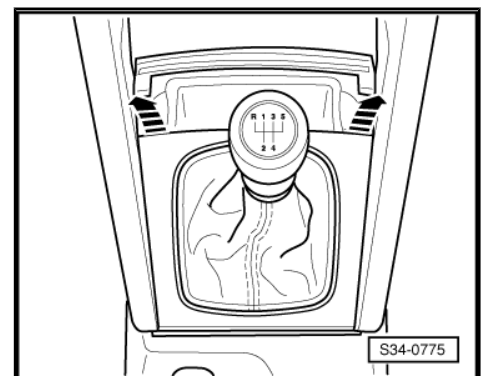


1.4 Remove and install gearshift knob with collar

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Removing

- Lever the collar upwards and out of centre console surround -arrows-.
- Pull the collar upwards over the gearshift knob.

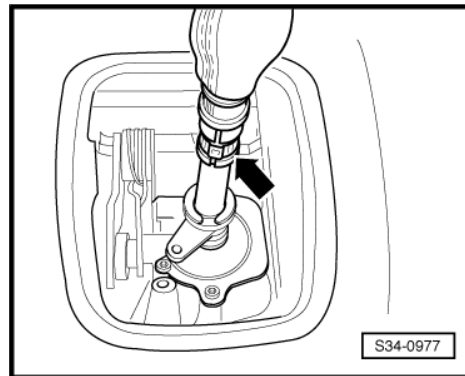




- Open clamp -arrow- and pull off gearshift knob together with the collar.

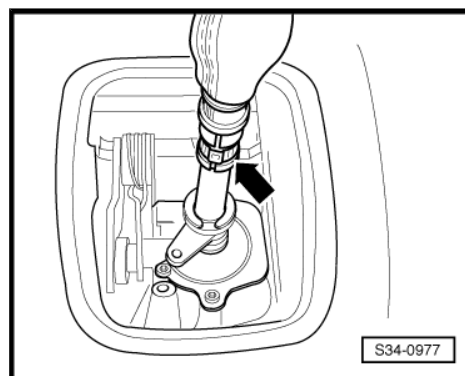
Install

- Turn collar inside out.



- Insert gearshift knob and collar and compress new collar clamp -arrow-.

When inserting the gearshift knob on the shift lever the gearshift knob must lock into the round slot of the gearshift lever.



1.5 Summary of components - Gearshift mechanism



Note

- ◆ Grease bearing and friction surfaces with grease -G 000 450 02- .
- ◆ Disassembling and assembling the gearshift mechanism ⇒ [page 44](#) .

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1 - Floor plate

- ☐ bend up tabs for removing
- ☐ always replace ⇒ Electronic Catalogue of Original Parts

2 - Gasket

- ☐ always replace ⇒ Electronic Catalogue of Original Parts

3 - Shift lever

- ☐ can be installed or removed with the shift lever guide pos. 15 mounted

4 - Insulating washer

- ☐ push up to the stop-arrow-onto the shift lever
- ☐ in case of damage replace ⇒ Electronic Catalogue of Original Parts

5 - Lock washer

- ☐ do not damage cable when removing
- ☐ always replace ⇒ Electronic Catalogue of Original Parts

6 - Selector cable

- ☐ removing and installing ⇒ [page 57](#)
- ☐ Fitting position, ⇒ [page 39](#)
- ☐ adjust ⇒ [page 59](#)

7 - Bush for selector cable

8 - Shift cable

- ☐ removing and installing ⇒ [page 57](#)
- ☐ Fitting position ⇒ [page 39](#)
- ☐ adjust ⇒ [page 59](#)

9 - Damping

- ☐ removing and installing ⇒ [page 44](#)

10 - Bearing shell

- ☐ removing and installing ⇒ [page 44](#)
- ☐ when removing, the catches of the bearing shell are usually damaged
- ☐ always replace ⇒ Electronic Catalogue of Original Parts

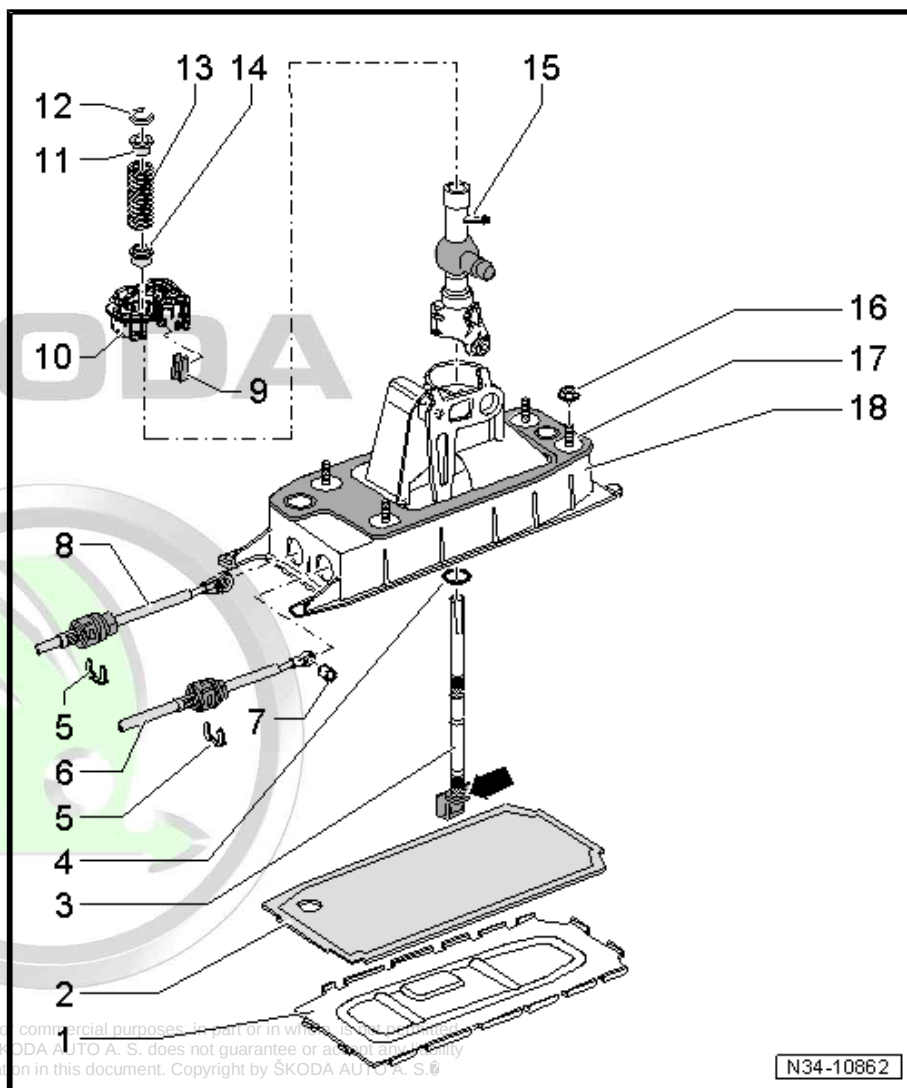
11 - Bush

12 - Lock washer

- ☐ removing and installing ⇒ [page 44](#)

13 - Pressure spring

- ☐ removing and installing ⇒ [page 44](#)



14 - Bush

15 - Shift lever guide

- ☐ removing and installing ➔ [page 44](#)

16 - Nut

- ☐ M8 = 25 Nm
- ☐ M6 = 8 Nm
- ☐ 4 pieces

17 - Gasket

- ☐ between shift housing and underbody
- ☐ self-adhesive
- ☐ stick onto shift housing

18 - Shift housing

- ☐ with pressure spring and selector angle
- ☐ Pressure spring and selector angle cannot be removed

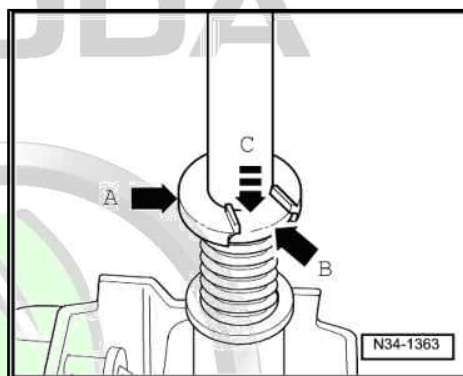
Removing and installing circlip

- To remove and install the circlip -arrow A- press bushing -arrow B- with a screwdriver up to the stop in the direction of the arrow -arrow C- and remove circlip.



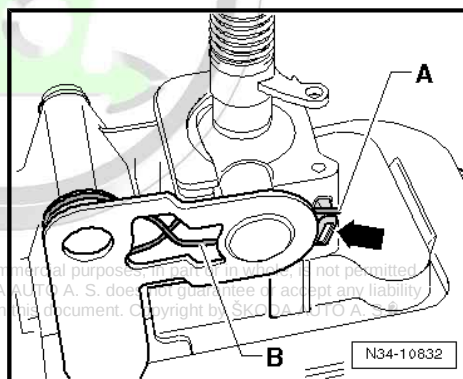
Note

- ◆ Do not twist bush when pressing down.
- ◆ Mounting slot in shift lever for circlip must be visible.
- ◆ Release spring carefully.



Removing and installing damping -arrow-

- Press the pressure spring leg -A- to the left until it is located next to the damping -arrow-.
- Press the shift lever to the lift and pull off the damping.
- After installing the damping, the pressure spring legs -A- and -B- must rest on the damping -arrow-.



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1.6 Disassembling and assembling the gearshift mechanism

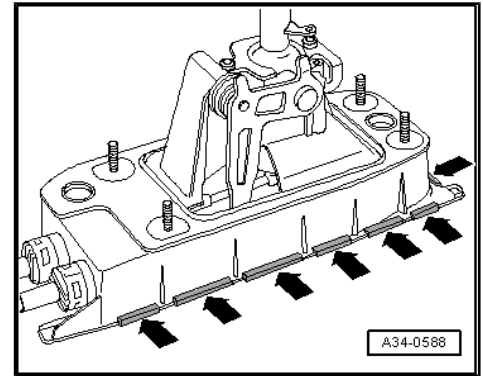
Special tools and workshop equipment required

- ◆ Insert base -T10083-
- ◆ Grease -G 000 450 02-

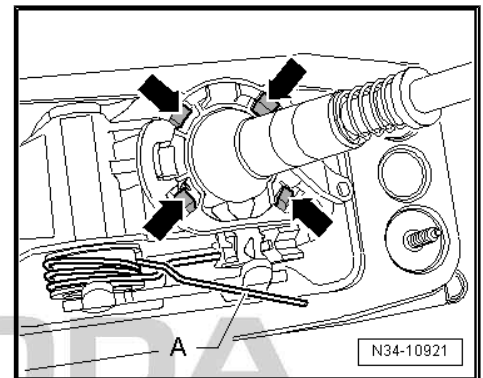
1.6.1 Dismantling

- Removing shift mechanism ➔ [page 53](#) .

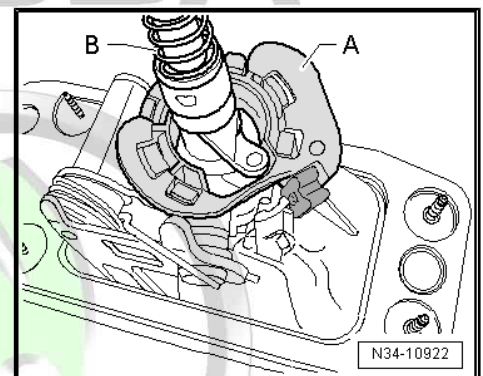
- Bend up the tabs -arrows- of the floor plate for shift mechanism with a screwdriver and remove the floor plate; (the tabs in the front area of the floor plate are not shown in the illustration).
- Remove gasket from shift housing.
- Remove shift cable and selector cable from the shift housing
⇒ [page 42](#) .



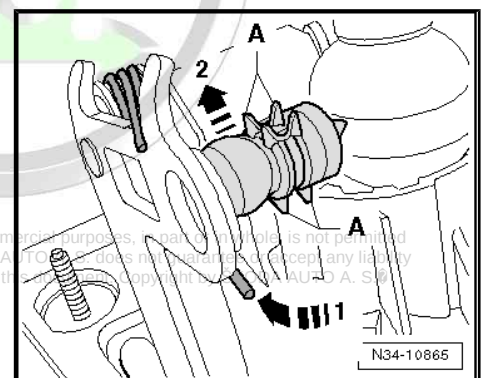
- Lift the upper leg -A- of the pressure spring over the tabs of the selector angle.
- Use a screwdriver to press the catches -arrows- of the bearing shell in direction of the bearing ball for the shift lever guide; if necessary break off the catches -arrows-.



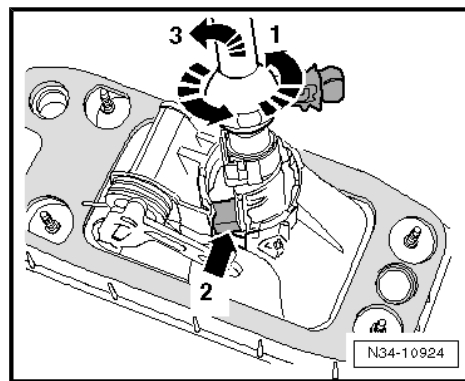
- Lever bearing shell -A- with shift lever guide and shift lever -B- out of the shift housing.
- Then press the bearing shell off the bearing ball for the shift lever guide and remove.



- During further work procedure observe the guides -A-.
- The guides -A- must not break off.
- Lever the lower leg of the pressure spring up to the stop onto the shoulder at the selector angle plate -direction of arrow 1-.
- Now pull up the shift lever guide as far as the stop and pull the ball stud out of the selector angle plate -direction of arrow 2-.



- Then turn the shift lever guide in -direction of arrow 1-.
- The stud -arrow 2- must be located in the recess of the shift housing.
- Afterwards, swivel out the shift lever guide with shift lever in -direction of arrow 3-.



1.6.2 Assembling together



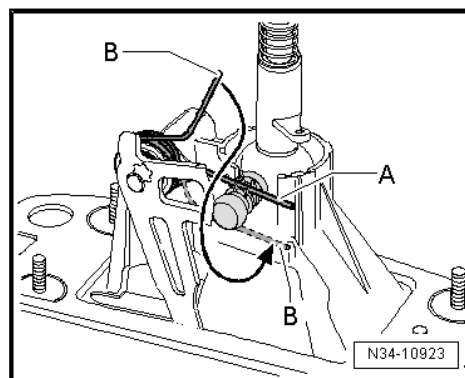
Caution

The lower leg of the pressure spring (⇒ page 45) can jump off uncontrolled from the shoulder of the selector angle during further handling.

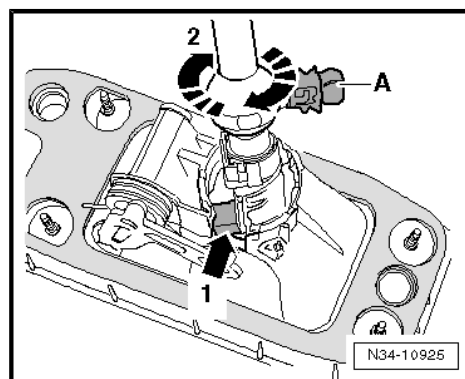
- Thus carefully press down the lower leg from the shoulder of the selector angle plate.

The legs of the pressure spring tighten “crosswise” with a loud noise

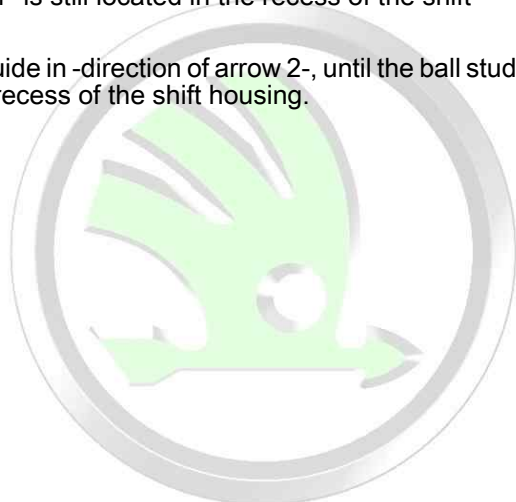
- To slacken, turn around the legs of the pressure spring -A- and -B- towards the right.
- The legs -A- and -B- must point in the opposite direction (shown here for inserted shift lever guide).



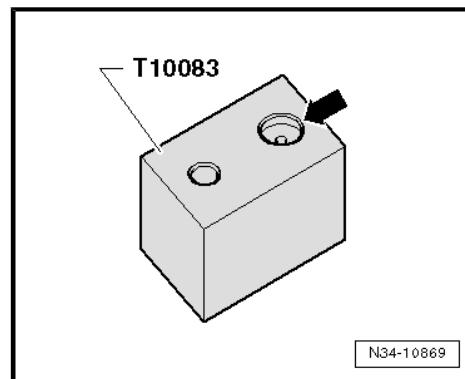
- Insert shift lever guide with shift lever into the shift housing.
- The stud -arrow 1- is still located in the recess of the shift housing.
- Turn shift lever guide in -direction of arrow 2-, until the ball stud -A- is above the recess of the shift housing.



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- Position shift housing with shift lever guide into the larger recess -arrow- of the Insert base -T10083- .

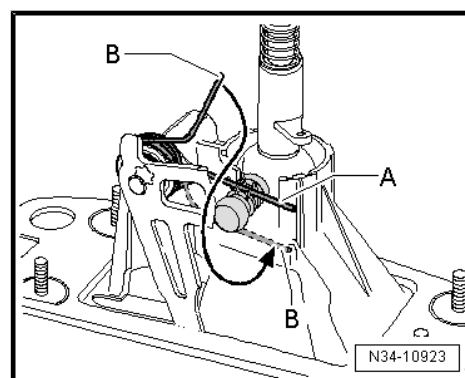


- The shift lever guide must protrude out of the shift housing as far as the stop.
- Insert the leg -A- of the pressure spring from the top into the guide.
- Pull leg -B- of pressure spring downwards and insert the leg -B- next to the guide (in direction of the spherical head).

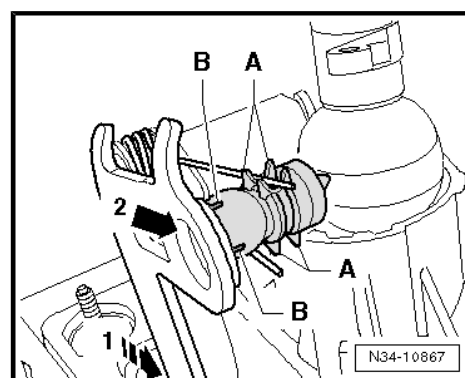


Note

To provide a clearer illustration, only the selector angle plate is partially illustrated.

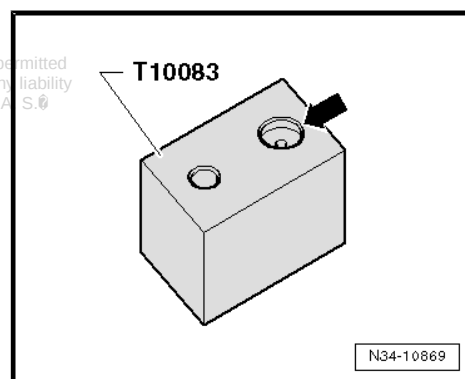


- Carefully remove shift housing with shift lever guide from the insert base - T10083- .
- Move selector angle plate up to stop to the rear (opposite the location holes for shift and selector cable) -direction of arrow 1-.
- Grease the ball stud with grease -G 000 450 02- .
- Press the ball stud into the selector angle plate -arrow 2-.
- The guides -A- and the tabs -B- must not be damaged.

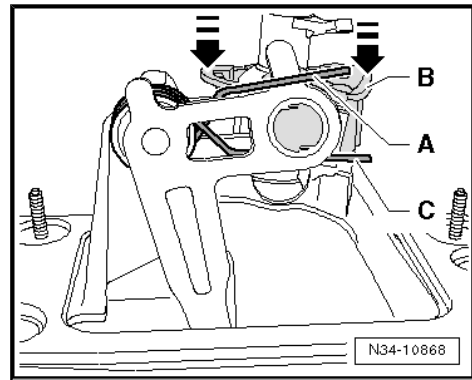


- Position shift housing with shift lever guide into the larger recess -arrow- of the Insert base -T10083-.

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- The shift lever guide must protrude out of the shift housing as far as the stop.
- Lift the upper leg -A- of the pressure spring over the stud of the selector angle plate.
- Use a new bearing shell -B-.
- Grease the bearing shell and the bearing ball of the shift lever guide with grease -G 000 450 02- .
- Press the bearing shell up to stop onto the bearing ball of the shift lever guide.
- Remove shift housing from the insert base -T10083- .
- Press the bearing shell into the shift housing -arrows-.
- All catch pegs must click audibly.
- Insert the lower leg -C- of the pressure spring into the guide.
- Lift the upper leg -A- of the pressure spring over the stud of the selector angle plate into the guide.
- Mount shift lever, shift cable, selector cable and floor plate
⇒ [page 42](#) .
- Installing shift mechanism ⇒ [page 53](#) .
- Setting the shift mechanism ⇒ [page 59](#) .



1.7 Summary of components - Control cables



Note

Grease bearing and friction surfaces with grease -G 000 450 02- .

ŠKODA



1 - Shift cable

- ☐ slacken from the shift lever guide within the shift mechanism
- ☐ press onto the selector angle guide within the shift mechanism
- ☐ connect with cable lock Pos. 11
- ☐ Fitting position
⇒ [page 39](#)
- ☐ removing and installing
⇒ [page 57](#)
- ☐ attach with cable strap to the selector cable
⇒ [page 51](#)
- ☐ after installing set shift mechanism
⇒ [page 59](#)

2 - Selector cable

- ☐ slacken from selector angle plate within the shift mechanism
- ☐ press onto selector angle plate within the shift mechanism
- ☐ connect with cable lock Pos. 10
- ☐ Fitting position
⇒ [page 39](#)
- ☐ removing and installing
⇒ [page 57](#)
- ☐ attach with cable strap to the selector cable
⇒ [page 51](#)

- ☐ after installing set shift mechanism ⇒ [page 59](#)

3 - Bush for selector cable

4 - Shift housing

5 - Locking clips

- ☐ do not damage cable when removing
- ☐ always replace ⇒ Electronic Catalogue of Original Parts

6 - 20 Nm

- ☐ 3 pieces
- ☐ for cable support

7 - Cable support

- ☐ for control cables

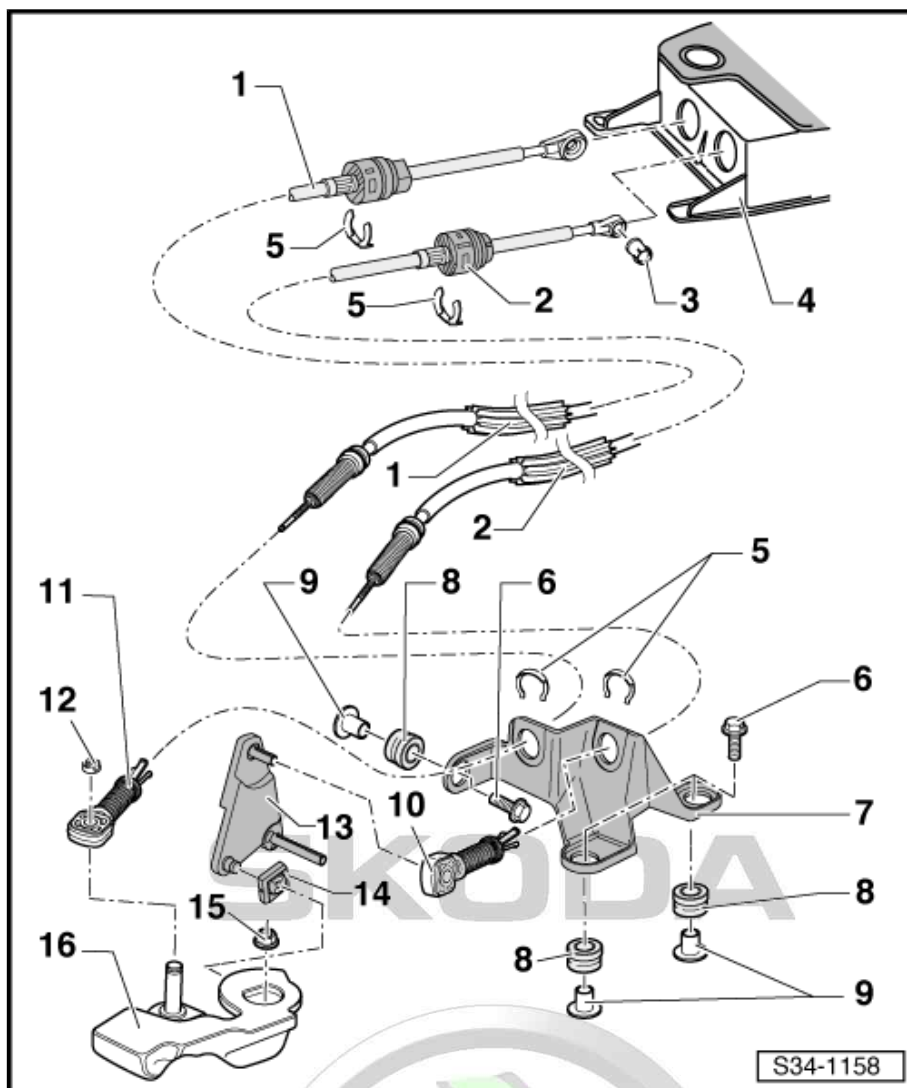
8 - Grommet

- ☐ Mounting of cable support to gearbox

9 - Bush

10 - Cable lock

- ☐ for selector cable at relay lever
- ☐ do not interchange, cable locks for selector cable at relay lever and for shift cable at gearshift lever are different
- ☐ after installing set shift mechanism ⇒ [page 59](#)



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- ☐ remove and install together with relay lever Pos. 13 ➔ [page 52](#)
- ☐ remove from relay lever ➔ [page 52](#)
- ☐ press onto relay lever ➔ [page 52](#)
- ☐ Assignment ➔ [page 50](#)

11 - Cable lock

- ☐ for shift cable at gearbox shift lever
- ☐ after installing set shift mechanism ➔ [page 59](#)
- ☐ do not interchange, cable locks for selector cable at relay lever and for shift cable at gearshift lever are different
- ☐ Assignment ➔ [page 50](#)

12 - Lock washer

- ☐ always replace ➔ Electronic Catalogue of Original Parts

13 - Reversing lever

- ☐ Fitting position ➔ [page 51](#)
- ☐ after installing set shift mechanism ➔ [page 59](#)
- ☐ remove and install together with cable lock Pos. 10 ➔ [page 52](#)

14 - Sliding shoe

15 - 23 Nm

- ☐ always replace ➔ Electronic Catalogue of Original Parts

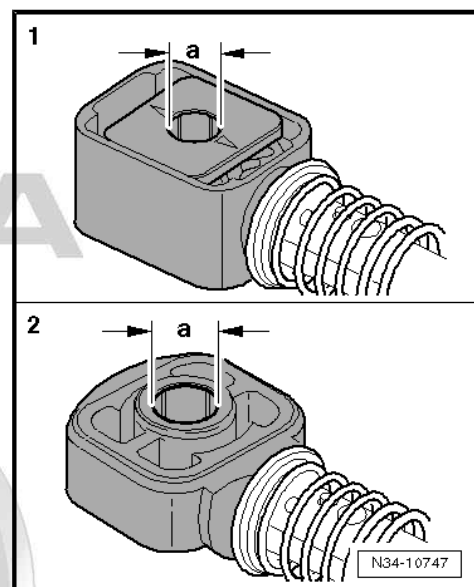
16 - Gearbox shift lever

- ☐ with balancing weight
- ☐ insert in such a way that the interrupted spacing of the teeth matches the gearshift shaft ➔ [page 51](#)
- ☐ after installing set shift mechanism ➔ [page 59](#)
- ☐ Fitting position ➔ [page 51](#)

Assign cable locks

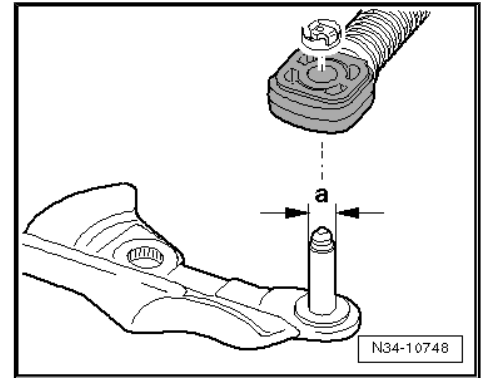
The holes in the cable locks have different diameters.

Cable lock for	Dimension "a"
1 - Shift cable at gearbox shift lever	8.5 mm
2 - Selector cable at relay lever ➔ page 52	10 mm



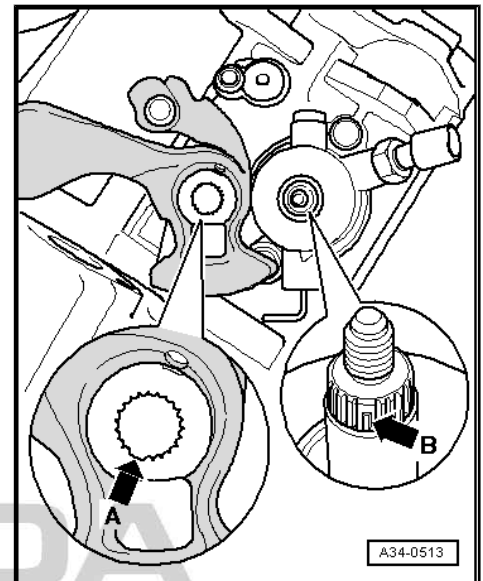
Bolt diameter for attaching the cable lock of the shift cable

Mounting pin for the cable lock of the shift cable	Dimension "a"
Ø of the mounting pin	8.5 mm



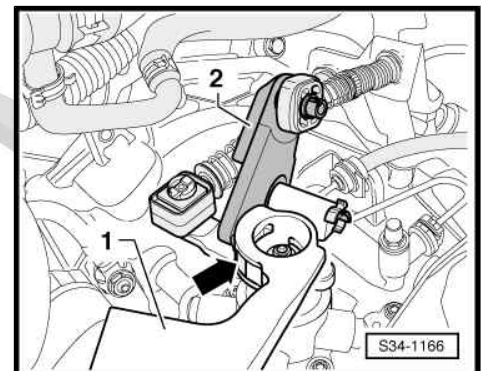
Install gearshift lever

- When positioning the gearshift lever, make sure that the tooth opening -arrow A- is located above the interrupted spacing of the teeth for the gearshift shaft -arrow B-.



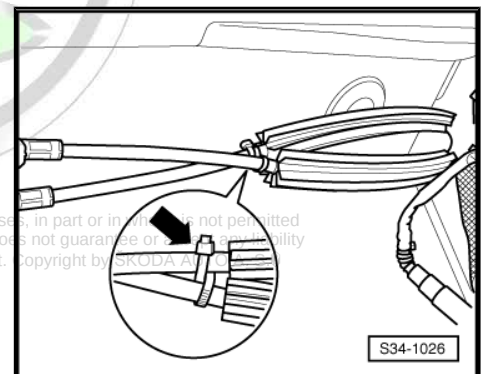
Fitting location of gearbox shift lever/relay lever

- Gearbox shift lever with balancing weight
- Relay lever is inserted over the sliding shoe -arrow- into the sliding rail of the gearbox shift lever



Fitting position of cable strap for cable attachment

- Cross cable strap -arrow-, in order to coil up the cables and fix as shown.

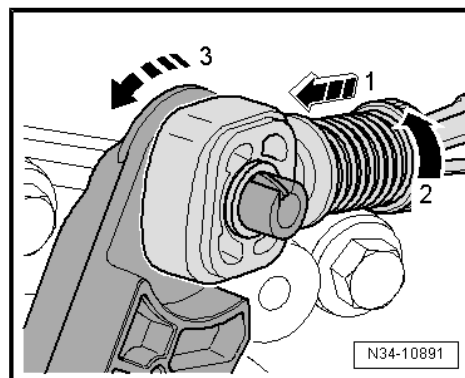


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1.7.1 Removing and installing the cable lock from the relay lever

Removing and installing relay lever.

- In order to avoid damage to the selector cable, the cable lock must be separated from the selector cable before removal.
- Gearbox shift lever is located in the neutral position.
- Pull forward the locking mechanism as far as the stop in -direction of arrow 1-, then lock by turning to the left in -direction of arrow 2-.
- Press the relay lever towards the front in the -direction of arrow 3-.



The relay lever is secured with a catch -arrow 1- in the cover

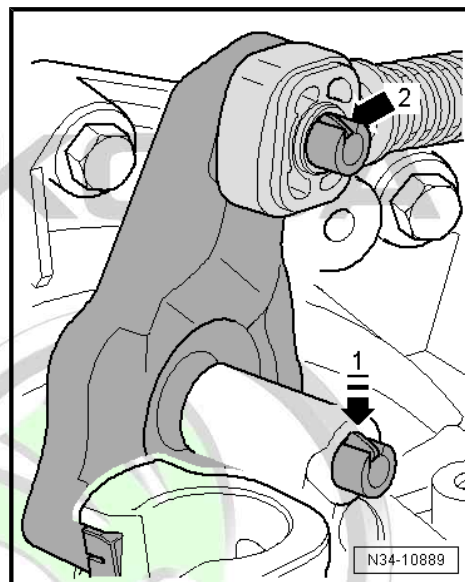
- Carefully press down the catch -arrow 1- up to the stop.
- Afterwards move relay lever in its bearing point back and forward (direction of operation). To do so, carefully pull out the relay lever together with the cable lock -arrow 2-.
- Only remove the cable lock -arrow 2- on removed relay lever
⇒ [page 53](#)



Note

To install, grease bearing points and friction surfaces with grease -G 000 450 02-.

- Press cable lock onto the relay lever ⇒ [page 53](#)
- Insert relay lever together with cable lock.
- The catch -arrow 1- secures the relay lever.
- The cable lock must be located behind the catch -arrow 2-.



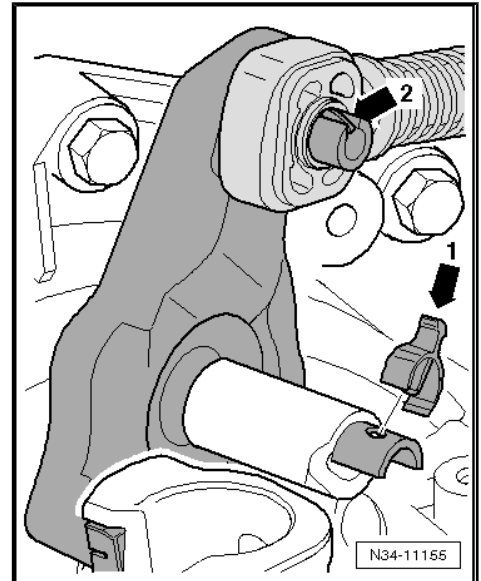
The relay lever is secured with a clip -arrow 1- in the cover

- Remove the clip -arrow 1- and the relay lever together with the cable lock -arrow 2-.



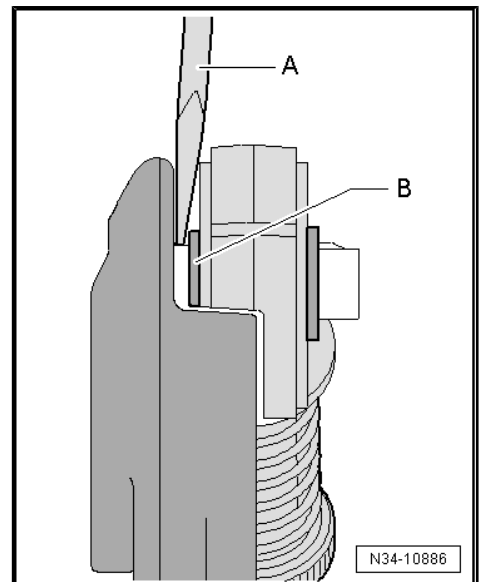
Note

To install, grease bearing points and friction surfaces with grease -G 000 450 02-.



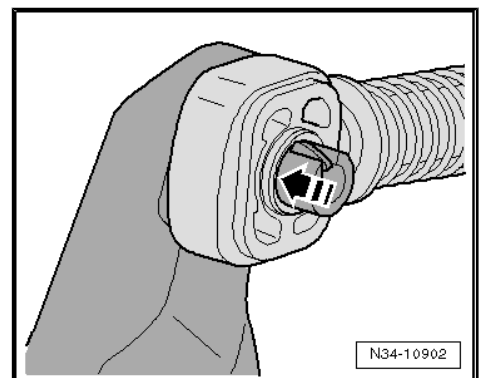
Lever off cable lock for selector cable from relay lever

- Relay lever removed.
- Insert cross-head screwdriver -A- between bushing -B- and relay lever.



Press on cable lock

- Relay lever removed.
- The cable lock must only be pressed onto the bushing -arrow-.
- Cable lock must move freely on relay lever.
- It must be located behind the catch ➤ [page 52](#).



1.8 Removing and installing shift mechanism

1.8.1 Removing

Special tools and workshop equipment required

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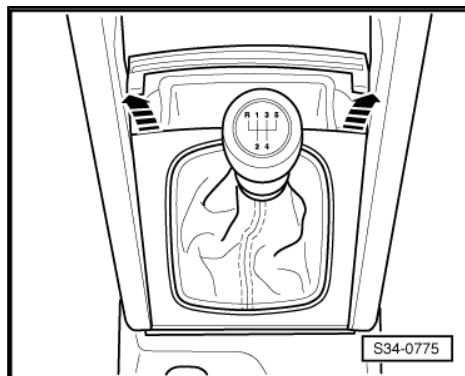
◆ Grease -G 000 450 02-



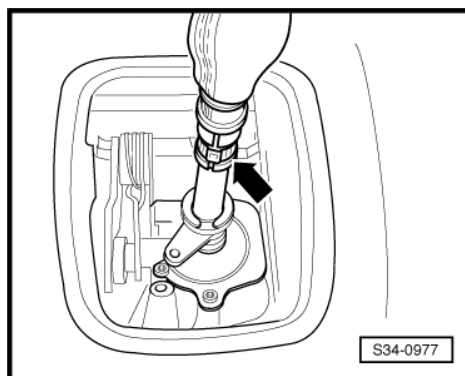
Note

After the battery earth strap is disconnected and reconnected, carry out additional operations ⇒ Electrical System ⇒ Rep. Gr. 27.

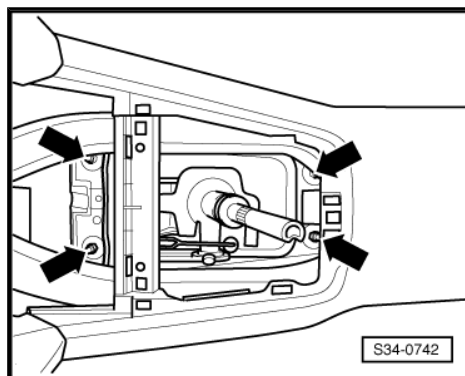
- Disconnect the battery-earth strap with the ignition off ⇒ Electrical System ⇒ Rep. Gr. 27.
- Lever the collar upwards and out of centre console surround -arrows-.



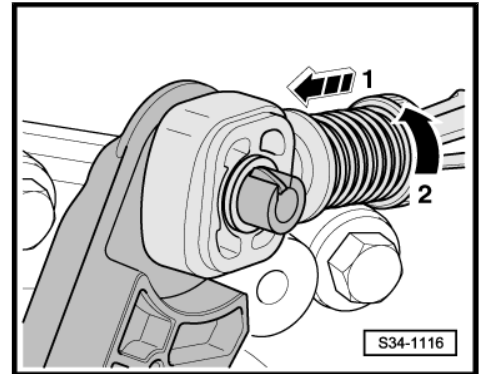
- Open clamp -arrow- and pull off gearshift knob together with the collar.
- If present, detach the noise insulation.
- Remove the ashtray ⇒ Body Work ⇒ Rep. Gr. 68.



- Unscrew nuts -arrows- attaching the shift housing.
- Remove air filter ⇒ Engine ⇒ Rep. Gr. 24.
- In order to avoid damage to the selector cable, the cable lock must be separated from the selector cable before removal.



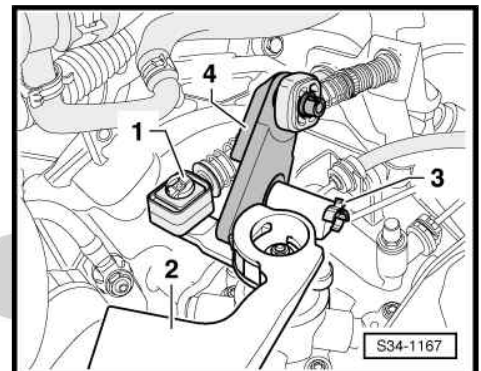
- Pull forward the locking mechanism as far as the stop in -direction of arrow 1-, then lock by turning to the left in -direction of arrow 2-.



- Remove circlip -1- for shift cable from gearbox shift lever -2-.
- Pull off shift cable from the stud of the gearbox shift lever.

The relay lever -4- is secured with a clip -3- in the cover

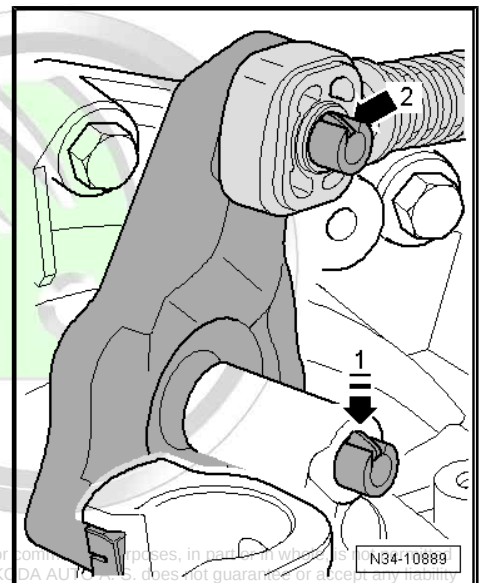
- Unclip -3- out of the hole of the relay lever and pull out relay lever -4- together with the cable lock out of the cover.



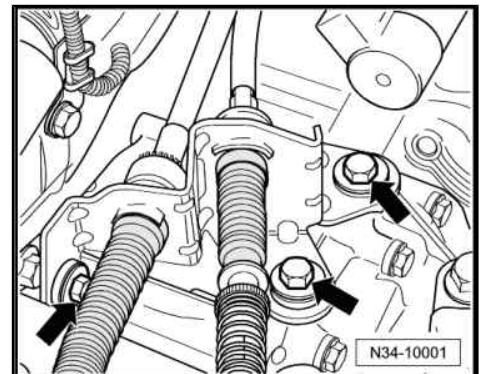
The relay lever is secured with a catch -arrow 1- in the cover

- Carefully press down the catch -arrow 1- up to the stop.
- Afterwards move relay lever in its bearing point back and forward (direction of operation). To do so, carefully pull out the relay lever together with the cable lock -arrow 2-.

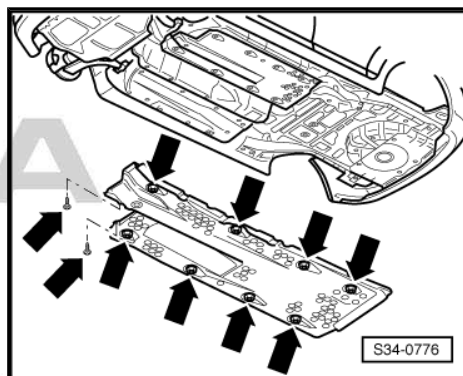
Continued for all gearshift mechanisms



- Disconnect the Bowden cable support from gearbox -arrows-.
- Remove the sound dampening system ⇒ Body Work ⇒ Rep. Gr. 50 .



- Remove underbody cover on right and left -arrows-.

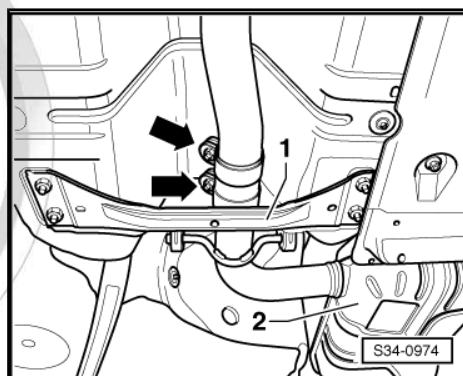


- Detach tunnel bridge -1- below the exhaust system ➔ Engine ➔ Rep. Gr. 26 .
- Separate the exhaust system at the double clamp -arrows-.
- Support the front exhaust pipe.



Note

The decoupling elements in the exhaust pipe should not be bent by more than 10° - risk of damage.



- Unhook the rear silencer -2- from the retaining straps and remove the rear silencer.
- If necessary, remove pre-exhaust pipe ➔ Engine ➔ Rep. Gr. 26 .
- Remove the heat shield below the shift housing.
- Swivel shift housing down and remove with control cables.

1.8.2 Install

Installation is performed in the reverse order, pay attention to the following points:

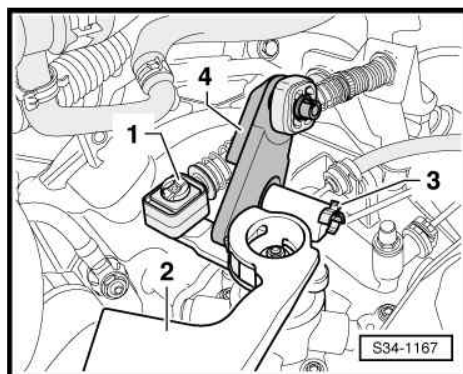
The holes in the cable locks have different diameters.

Assignment of the cable locks ➔ page 50 .

- Apply a small quantity of grease -G 000 450 02- onto the stud of the gearbox shift lever -2-.
- Replace circlip -1- after each removal.
- Secure the shift cable with the lock washer -1-.

The relay lever -4- is secured with a clip -3- in the cover

- Apply a small quantity of grease -G 000 450 02- onto the stud of the relay lever.
- Insert the relay lever -4- together with the cable lock in the cover and secure with the clip -3-.





The relay lever is secured with a catch -arrow 1- in the cover



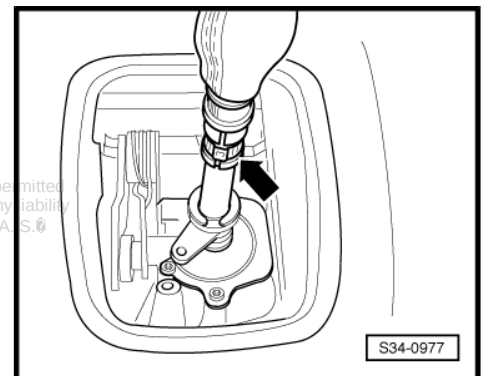
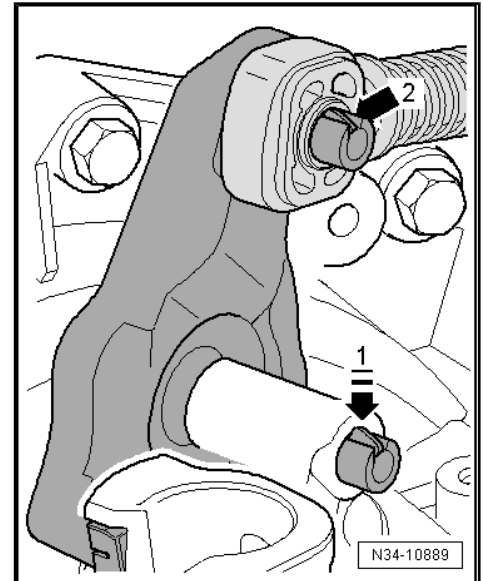
Note

To install, grease bearing points and friction surfaces with grease -G 000 450 02- .

- Insert relay lever together with cable lock -arrow 2-.
- The catch -arrow 1- secures the relay lever.

Continued for all gearshift mechanisms

- Insert the selector cable into the cable lock.
- Align shift housing parallel to vehicle body.
- The distance to the vehicle body must be the same on both sides.
- Install the ashtray ⇒ Body Work ⇒ Rep. Gr. 68 .
- Replace clamp and press together -arrow-.
- Assemble exhaust system free of stress and attach tunnel bridge ⇒ Engine ⇒ Rep. Gr. 26 .
- Install the bottom noise insulation ⇒ Body Work ⇒ Rep. Gr. 50 .
- Install the ashtray ⇒ Body Work ⇒ Rep. Gr. 68 .
- Setting the shift mechanism. ⇒ [page 59](#)
- Install air filter ⇒ Engine ⇒ Rep. Gr. 24 .



Note

After the battery earth strap is disconnected and reconnected, carry out additional operations ⇒ Electrical System ⇒ Rep. Gr. 27 .

- Connect earth strap of battery while paying attention to the notes in the ⇒ Electrical System ⇒ Rep. Gr. 27 .

Tightening torques

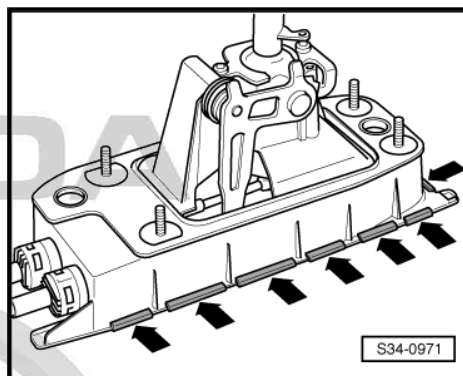
Component	Nm
Shift housing to body	⇒ page 42
Cable support to gearbox	⇒ page 48
Underbody cover	⇒ Body Work ⇒ Rep. Gr. 50

1.9 Removing and installing shift cable and selector cable

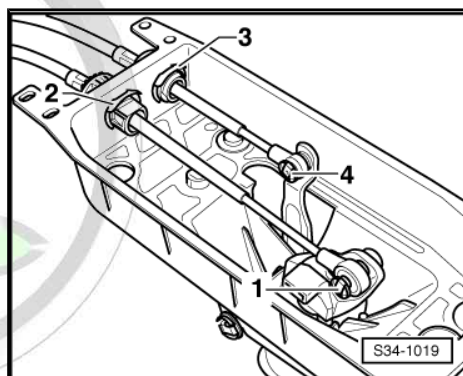
1.9.1 Removing

- Removing shift mechanism ⇒ [page 53](#) .

- Bend up tabs -arrows- of cover for the shift mechanism using a screwdriver and remove cover.
- Remove gasket ring.

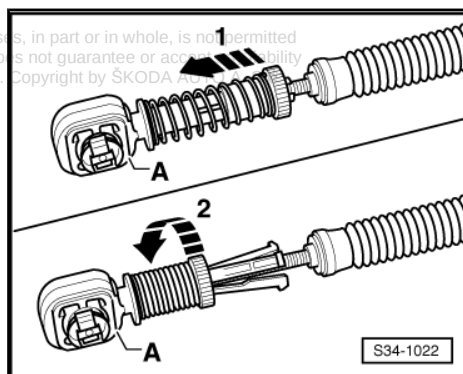


- Remove lock washers -2 and 3- (lock washers -1 and 4- are no longer available), selector cable and shift cable must be levered off from the shift lever or selector lever e.g. with a screwdriver.
- Remove shift cable and selector cable from shift housing.

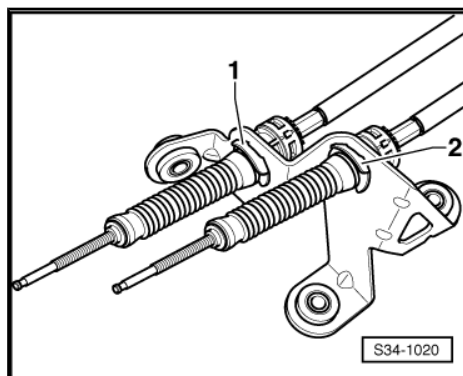


Unlock catches -A- for shift cable and selector cable as follows:

- Slide sliding sleeve forwards up to the stop -arrow 1-.
- Turn sliding sleeve to the right up to the stop -arrow 2- until it locks audibly.
- Remove the catches from the cables.



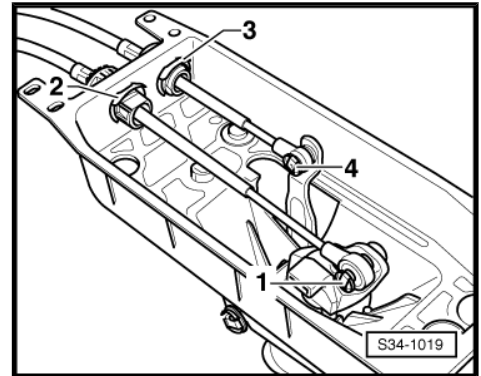
- Remove circlips -1- and -2-.
- Remove the cable support from the cables.



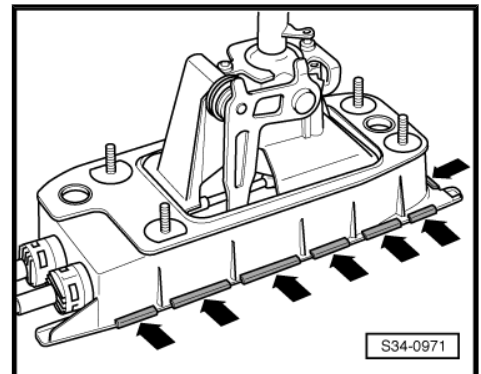
1.9.2 Install

Installation is performed in the reverse order, pay attention to the following points:

- Attach shift cable and selector cable to shift housing with circlips -2 and 3-.
- Press shift cable and selector cable onto shift lever and selector lever into shift housing (lock washers -1 and 4- are no longer available).



- Install gasket and attach cover for shift mechanism by pressing on the tabs -arrows- onto the shift housing.
- Installing shift mechanism ⇒ [page 53](#) .
- Setting the shift mechanism ⇒ [page 59](#) .



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1.10 Setting the shift mechanism

Special tools and workshop equipment required

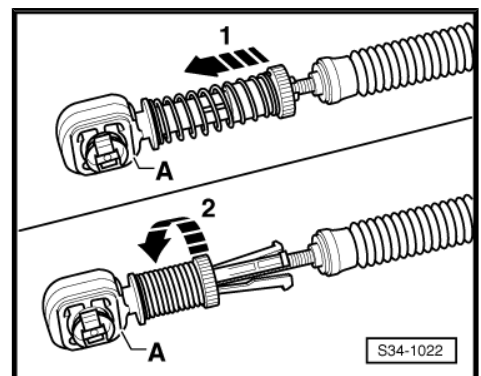
- ◆ Rig pin -T10027A-



Note

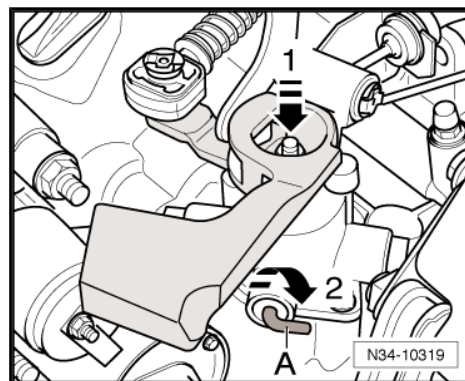
The following are required for correct setting of the shift mechanism:

- Gearbox, clutch and clutch control in perfect condition
- Shift mechanism operates freely
- Operating and transmission elements of the shift mechanism are in perfect condition
- Gearbox in Neutral
- Remove air filter ⇒ Engine ⇒ Rep. Gr. 24 .
- Pull forward the locking mechanism at shift cable and at selector cable -A- as far as the stop in -direction of arrow 1-, then lock by turning to the left in -direction of arrow 2-.



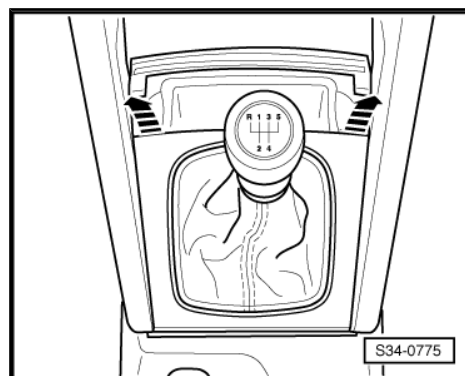
Fix the gearshift shaft as follows:

- Press down the gearshift shaft in -direction of arrow 1-.
- When pressing down the gearshift shaft turn angle lever -A- in -direction of arrow 2- and at the same time press it in direction of the gearshift shaft until it locks into the gearshift shaft.

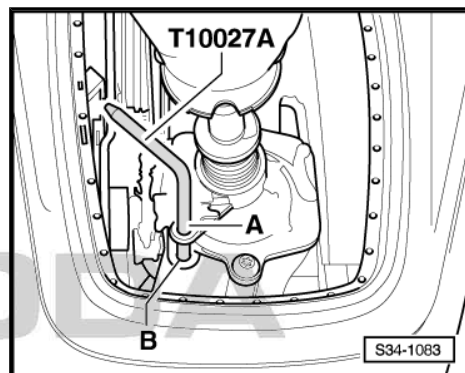


- Lever the collar upwards and out of centre console surround -arrows-.
- If present, detach the noise insulation.

Now fix the gearshift lever as follows:



- Insert the rig pin -T10027A - .



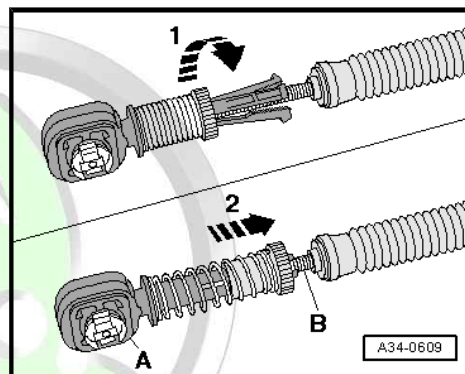
- Ensure that the selector and shift cable -B- are pushed free of tension into the catches -A-.
- Turn the locking mechanism at the shift cable and at the selector cable to the right as far as the stop -direction of arrow°1-.

The spring pushes the locking mechanism into the initial position -direction of arrow 2-.



Note

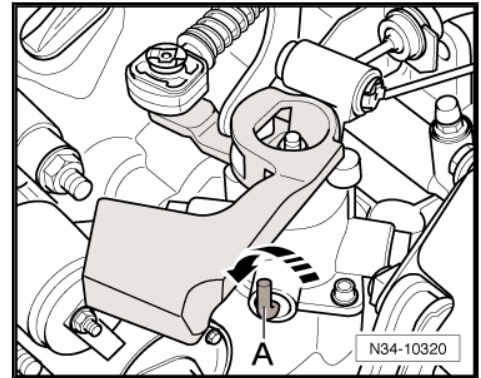
The shift cable is now adjusted.



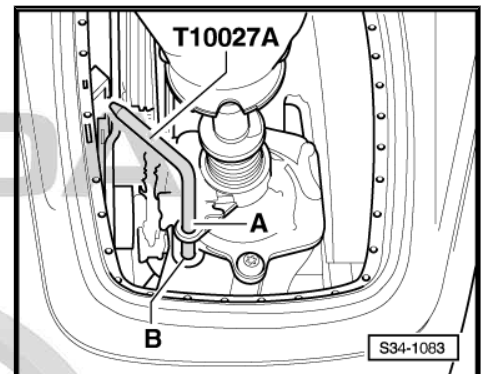
- Turn the angle lever -A- back to the initial position
-in direction of arrow-.

i Note

The angle lever -A- must be pressed out of the shift housing up to the stop and must point vertically upwards.



- Pull out the rig pin - T10027A- .
- If present, install the noise insulation.
- Press collar into the cover.
- Install air filter ⇒ Engine ⇒ Rep. Gr. 24 .



1.10.1 Functional test

- Shift lever must be positioned in Neutral in the selector lever gate of the 3rd/4th gear.
- Depress clutch.
- Shift through all gears several times. Pay particular attention to proper operation of the reverse gear lock.

If a gear catches when engaged again, set the shift mechanism once again ⇒ [page 59](#) .

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2 Removing and installing the gearbox

2.1 Removing the gearbox

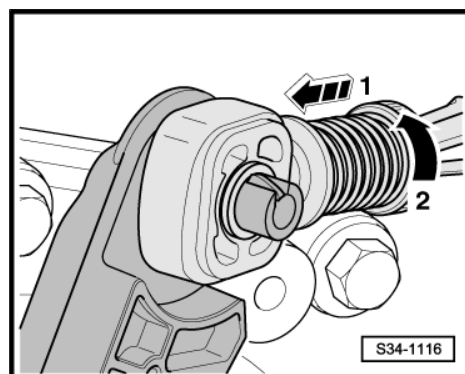
Special tools and workshop equipment required

- ◆ Supporting device -T30099-
- ◆ Shim -T30099/1-
- ◆ Hook for MP9-200 and T30099 -MP9-200/10 (10-222A/10)-
- ◆ Adjusting plate -3282/31-
- ◆ Engine/gearbox jack (e.g. -V.A.G 1383 A-)
- ◆ Gearbox attachment device -MP3-478 (3336)-
- ◆ Gearbox mount -3282-
- ◆ Grease for plug serration of clutch disc -G 000 100-
- Remove engine cover ⇒ Engine ⇒ Rep. Gr. 10 (if present).



Note

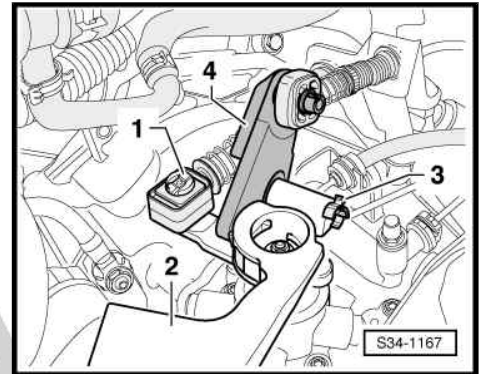
- ◆ *All cable straps which are detached or cut open when removing, should be fitted on again in the same place when installing.*
- ◆ *After the battery earth strap is disconnected and reconnected, carry out additional operations ⇒ Electrical System ⇒ Rep. Gr. 27 .*
- Disconnect the battery-earth strap with the ignition off ⇒ Electrical System ⇒ Rep. Gr. 27 .
- Remove battery and battery tray ⇒ Electrical System ⇒ Rep. Gr. 27 .
- Remove air filter ⇒ Engine ⇒ Rep. Gr. 24 .
- Remove the cooling water tank cover ⇒ Body Work ⇒ Rep. Gr. 66 .
- In order to avoid damage to the selector cable, the cable lock must be separated from the selector cable before removal.
- Pull forward the locking mechanism as far as the stop in -direction of arrow 1-, then lock by turning to the left in -direction of arrow 2-.



- Remove circlip -1- for shift cable from gearbox shift lever -2-.
- Pull off shift cable from the stud of the gearbox shift lever.

The relay lever -4- is secured with a clip -3- in the cover

- Unclip -3- out of the hole of the relay lever and pull out relay lever -4- together with the cable lock out of the cover.

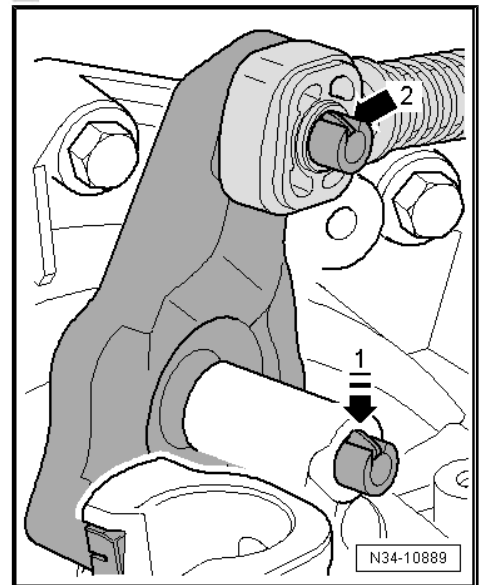


The relay lever is secured with a catch -arrow 1- in the cover

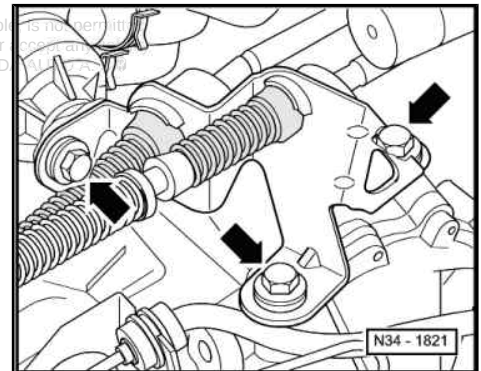
- Carefully press down the catch -arrow 1- of the relay lever up to the stop.
- Afterwards, carefully pull out the relay lever together with the cable lock -arrow 2- out of the bearing point in the cover. To do so move relay lever back and forward (direction of operation).

Continued for all vehicles

- Remove the gearshift lever from the gearshift shaft.



- Remove Bowden cable support -arrows-.
- Tie up shift cable and selector cable.



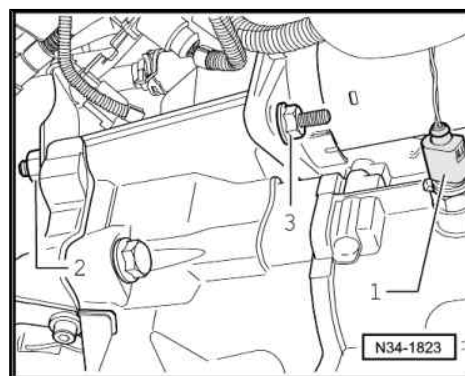
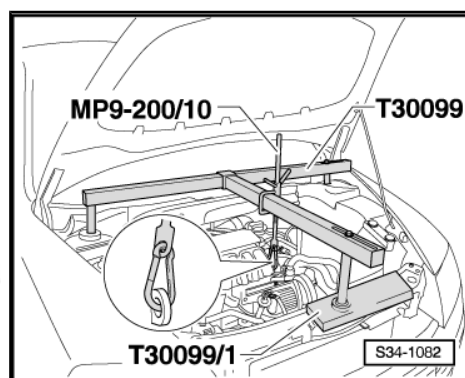
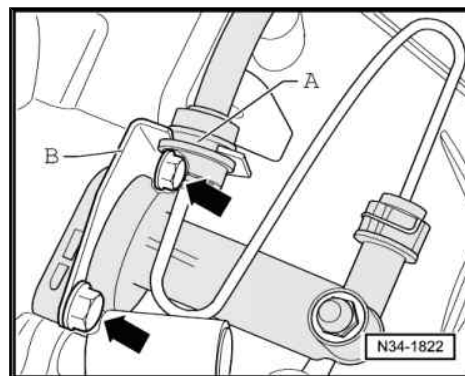
- Pull out the tube and hose line -A- from bracket -B- on the gearbox.
- Remove slave cylinder -arrows-, lay aside and secure with wire. Do not open line system.



Note

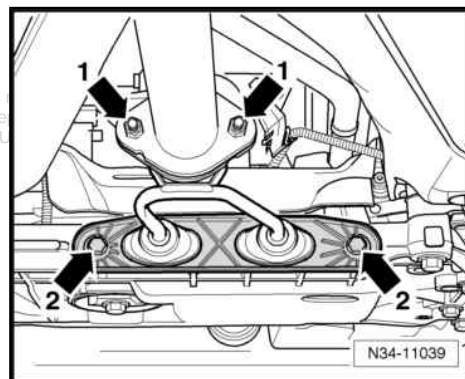
Do not depress the clutch pedal.

- Remove the earth strap from the engine/gearbox connecting screw.
- Remove engine/gearbox connecting screws at the top.
- Remove fixing screw for starter at the top.
- Fit supporting device -T 30099- .
- Slightly pre-tension the engine/gearbox unit via the spindles, do not raise.
- Loosen the front left wheel bolts.
- Raise vehicle.
- Unscrew left front wheel.
- Remove the noise insulation below the engine/gearbox ⇒ Body Work ⇒ Rep. Gr. 50 .
- Remove the front left wheelhouse liner ⇒ Body Work ⇒ Rep. Gr. 66 .
- Disconnect plug -1- of the reversing light switch -F4- .
- If present, remove nut -2-.
- Remove starter (screw -3-) ⇒ Electrical System ⇒ Rep. Gr. 27 .

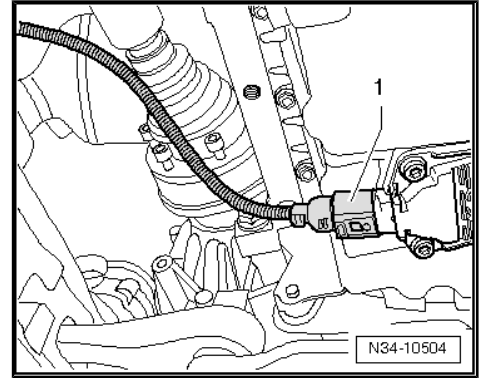


- Separate the exhaust system, -arrows 1- and unscrew the holder for the exhaust pipe from the assembly carrier -arrows 2- ⇒ engine ⇒ Rep. Gr. 26 .

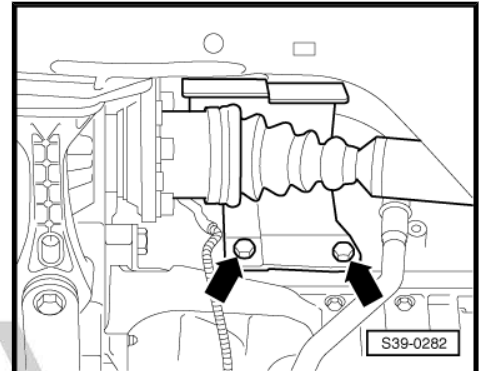
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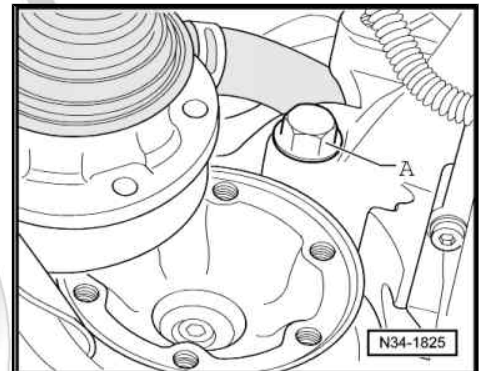
- Disconnect plug -1- for oil level and oil temperature sender - G266- .



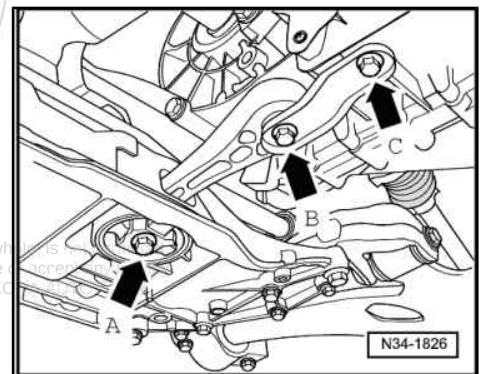
- Remove the screen cap for drive shaft (if present) from the engine -arrows-.
- Remove drive shafts from flange shafts and tie up as far as possible; do not damage the surface protection.



- Unscrew the engine/gearbox connecting screw -A- above the right flange shaft.



- Remove pendulum support -arrows°A-, -B- and -C-.



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- Remove the screws -arrows 1- of the left and right assembly carrier out of the gearbox mount.
- Move engine/gearbox unit into oblique position, to do so lower the supporting device -MP9-200 (10-222A)- via the spindle.



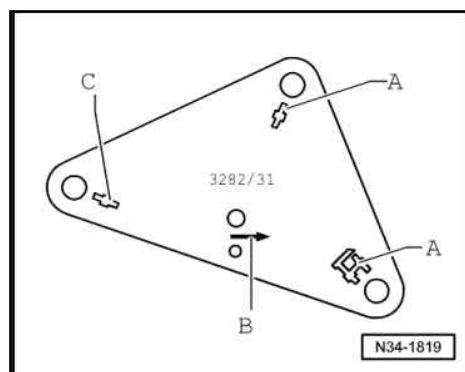
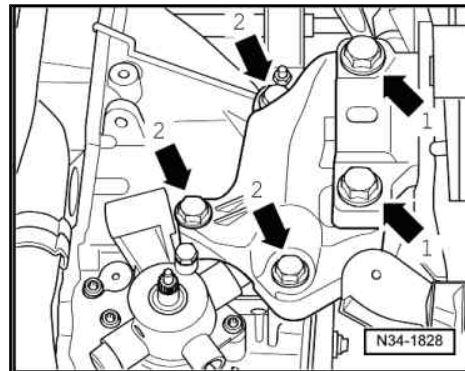
Note

Observe all lines when lowering the gearbox.

- Remove gearbox console, to do so screw out the screws -arrows 2-.

The gearbox mount -3282- is aligned for removal of the gearbox "0AJ" by using the adjusting plate -3282/31- .

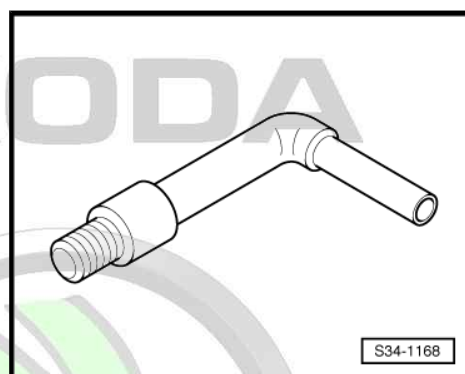
- Insert engine/gearbox mount -3282- into engine/gearbox jack - V.A.G 1383 A- .
- Position adjusting plate -3282/31- onto the gearbox mount -3282- (adjusting plate fits in only one position).
- Align arms of the gearbox mount to match the holes in the adjusting plate .
- Screw in mounting elements -A-, as shown on the adjusting plate .
- Instead of the mounting element -C- screw in the lifting hook .



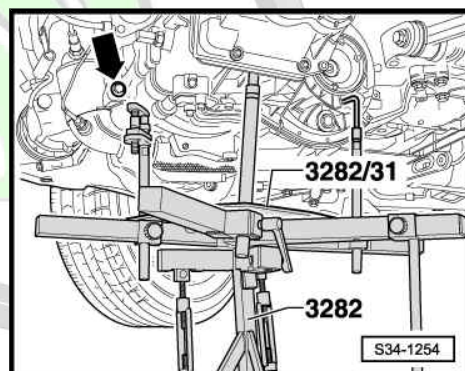
Note

The lifting hook is a component part of the gearbox mount -3282- .

- Position engine/gearbox jack below vehicle, arrow symbol -B- on adjusting plate points in the direction of travel/vehicle.



- Align the adjusting plate parallel to the gearbox.



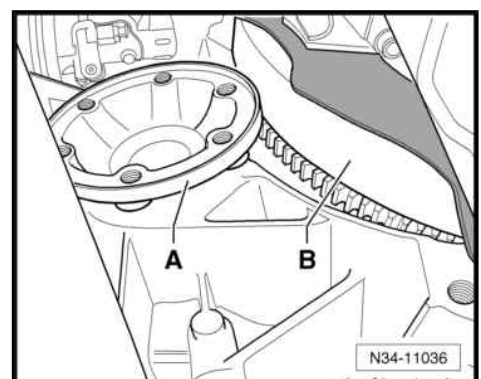
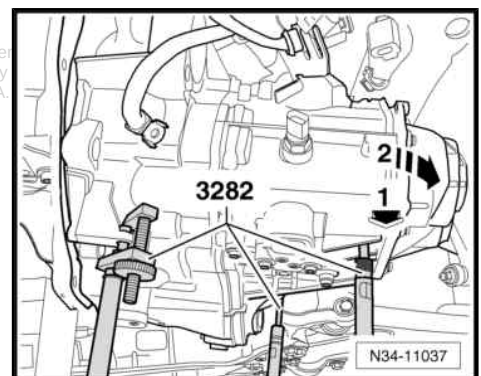
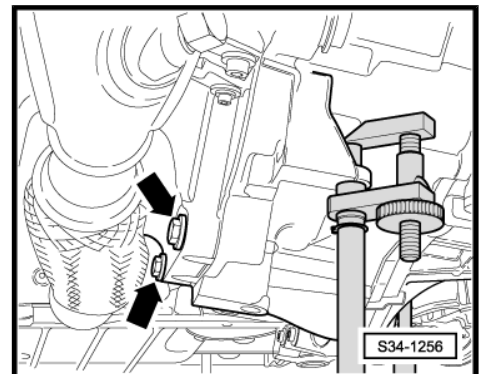
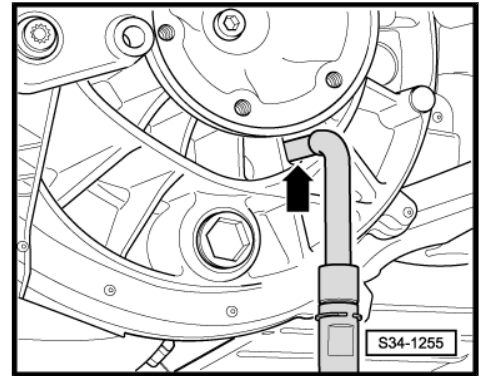
- Insert the lifting hook in one of the recesses of the gearbox housing below the left flange shaft -arrow-.
- Remove engine/gearbox connecting screw (-arrow- in the fig. S34-1254 ➔ [page 66](#)).

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- Separate the front exhaust system in order to unscrew the bottom screws -arrows- (only on 1.4 engine).
- Ask a second mechanic to carefully push the engine forwards.
- Press the gearbox out of the sleeves.

- Press the gearbox in the area of the cover for the gearbox housing to the front end -arrow 1- and turn it slightly towards the bottom -arrow 2-.
- Pay attention to the intermediate plate on the engine.

- After this, carefully guide the gearbox with the right flange shaft -A- past the flywheel -B- and the intermediate plate as shown.



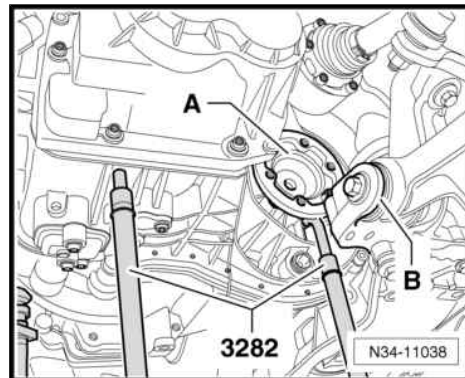


- The left flange shaft -A- is carefully guided past the console -B- of the assembly carrier as shown.
- Lower gearbox, to do so pay attention to the assembly carrier.
- Change the gearbox position at the spindles of the gearbox mount -3282- when lowering.



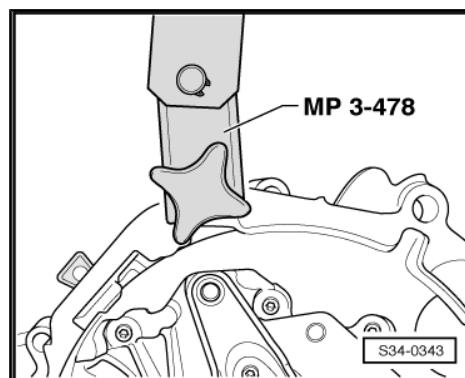
Note

Observe all lines when lowering the gearbox.



2.2 Transporting the gearbox

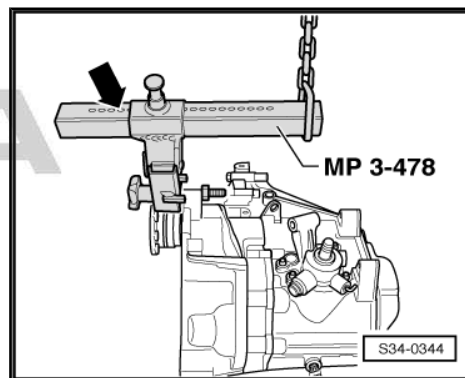
- Screw down gearbox suspension device -MP3-478- onto clutch housing.



- Adjust supporting arm at slide with locking pin.

Number of visible holes = 6.

- Raise gearbox with workshop crane and gearbox suspension device -MP 3-478- .
- Place down gearbox, e.g. in a transport container.



2.3 Installing the gearbox

The installation of the gearbox occurs in reverse order. Observe the stress-free assembly bracket in the vehicle ➔ Engine ➔ Rep. Gr. 10 .

- After installing, check gear oil level in the gearbox and if necessary top up with gear oil ➔ [page 71](#) .



Note

- ◆ Clean splines of drive shaft and apply a thin film of grease for plug serration of clutch disc -G 000 100 - .
- ◆ The clutch plate must slide freely up and down the drive shaft.
- ◆ If the gearbox is inserted, ensure the intermediate plate between the engine and gearbox is correctly installed.
- ◆ Check whether the dowel sleeves for centering the gearbox are present in the cylinder block, insert missing sleeves. If the sleeves are not provided, complications while shifting as well as problems with the clutch might occur and gearbox noises could arise.
- ◆ Installing starter and cables ⇒ Electrical System ⇒ Rep. Gr. 27 .
- ◆ Install drive shafts on gearbox ⇒ Chassis ⇒ Rep. Gr. 40 .
- ◆ Assemble exhaust system ⇒ Engine ⇒ Rep. Gr. 26 .
- ◆ Attach the shift mechanism to the gearbox ⇒ [page 53](#) .
- ◆ Setting the shift mechanism ⇒ [page 59](#) .
- ◆ Install battery and battery tray ⇒ Electrical System ⇒ Rep. Gr. 27 .
- ◆ Install air filter ⇒ Engine ⇒ Rep. Gr. 24 .
- ◆ Install the front left wheelhouse liner ⇒ Body Work ⇒ Rep. Gr. 66 .
- ◆ Install the noise insulation below the engine/gearbox ⇒ Body Work ⇒ Rep. Gr. 50 .
- ◆ Install front wheel ⇒ Chassis ⇒ Rep. Gr. 44 .
- ◆ After the battery earth strap is disconnected and reconnected, carry out additional operations ⇒ Electrical System ⇒ Rep. Gr. 27 .

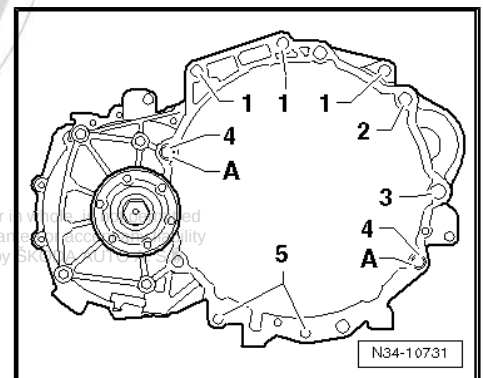
2.3.1 Tightening torques

Attachment of gearbox to 1.4 engine

Pos.	Screw	Pieces	Nm
1	M12 x 50	3	80
2 ¹⁾ 2)	M12 x 55	1	80
3 ¹⁾ 2)	M12 x 150	1	80
4	M12 x 60	2	80
5	M10 x 35	2	40
A	Dowel sleeves	2	

1) Screw with threaded pin M8

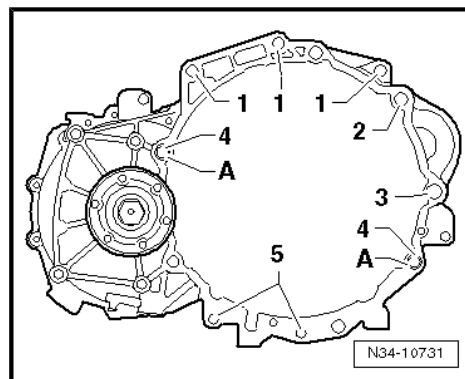
2) additional starter to gearbox





Attachment of gearbox to 1.2 engine

Pos.	Screw	Pieces	Nm
1	M12 x 60	3	80
2 ^{1) 2)}	M12 x 55	1	80
3 ^{1) 2)}	M12 x 150	1	80
4	M12 x 70	1	80
4 ³⁾	M12 x 80	1	80
5	M10 x 30	2	40
A	Dowel sleeves	2	



1) Screw with threaded pin M8

2) additional starter to gearbox

3) Screw above the flange shaft

Gearbox console to gearbox

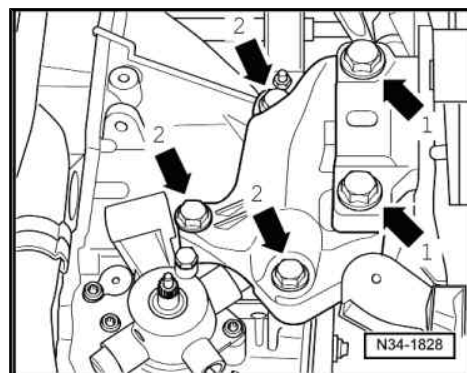
– Replace bolts.

Screws -arrows°2- 40 Nm + 90°

Gearbox to body

– Replace bolts.

Screws -arrows°1- 60 Nm + 90°



Tightening torques

Component	Tightening torque
Cable support to gearbox	⇒ page 48
Gearbox shift lever to gearshift shaft	⇒ page 48
Slave cylinder to gearbox	⇒ page 28
Pendulum support ¹⁾	⇒ Engine ⇒ Rep. Gr. 10
Screen cap of drive shaft to engine	⇒ Chassis ⇒ Rep. Gr. 40
Drive shaft to flange shaft	⇒ Chassis ⇒ Rep. Gr. 40
Wheel bolts to wheel hub	⇒ Chassis ⇒ Rep. Gr. 44

1) Always replace these screws ⇒ Electronic Catalogue of Original Parts .

3 Check gear oil level

Special tools and workshop equipment required

- ◆ Socket wrench insert -T30023 (3357)-

Gearbox oil specification ⇒ Electronic Catalogue of Original Parts .

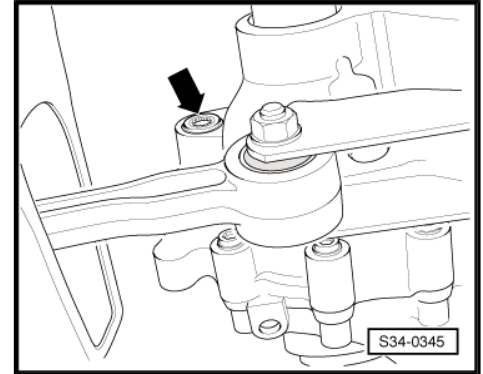
- Unscrew plug for inspecting gear oil -arrow-.

The oil is at the correct level if the gear is filled up to the lower edge of the oil filler hole.

- Screw in oil filler plug -arrow- and tighten to tightening torque
⇒ [page 71](#) .

If re-filling, do the following:

- Unscrew oil filler plug -arrow-.
- Pour in gear oil up to lower edge of filler hole.
- Screw in plug -arrow-.
- Start engine, engage a gear and allow gearbox to rotate for **about 2 minutes**.
- Switch off engine, unscrew plug -arrow- and top up gear oil to lower edge of filler hole.
- Screw in oil filler plug -arrow- and tighten to tightening torque
⇒ [page 71](#) .



Different versions of oil filler plug and oil drain plug.

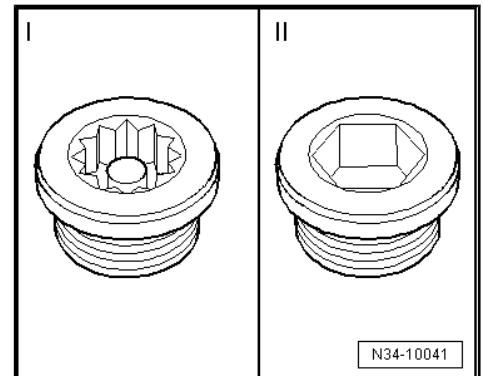
I - Oil filler plug or oil drain plug with internal serration 24 Nm

II - Oil filler plug or oil drain plug with internal serration 32 Nm



Note

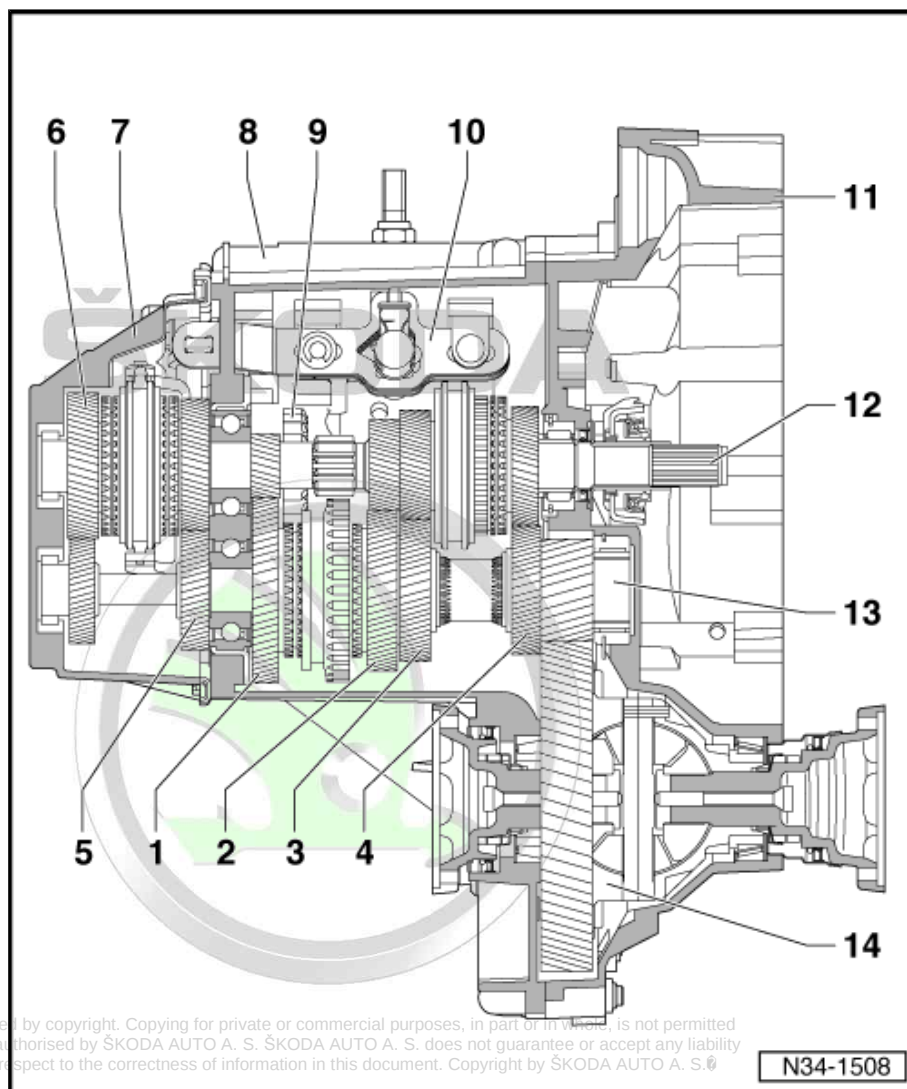
- ◆ Loosen and tighten oil filler plug or oil drain plug with hexagon socket using socket wrench insert -T30023 (3357)- .
- ◆ Assign oil filler plug or oil drain plug via the ⇒ Electronic Catalogue of Original Parts .



4 Disassembling and assembling the gearbox

4.1 Gearbox overview

- 1 - 1st gear
- 2 - 2nd gear
- 3 - 3rd gear
- 4 - 4th gear
- 5 - 5th gear
- 6 - 6th gear
- 7 - Cover for gearbox housing
- 8 - Gearbox housing
- 9 - Reverse gear wheel
- 10 - Shift mechanism
□ (Gearshift forks)
- 11 - Clutch housing
- 12 - Drive shaft
- 13 - Output shaft
- 14 - Differential gear



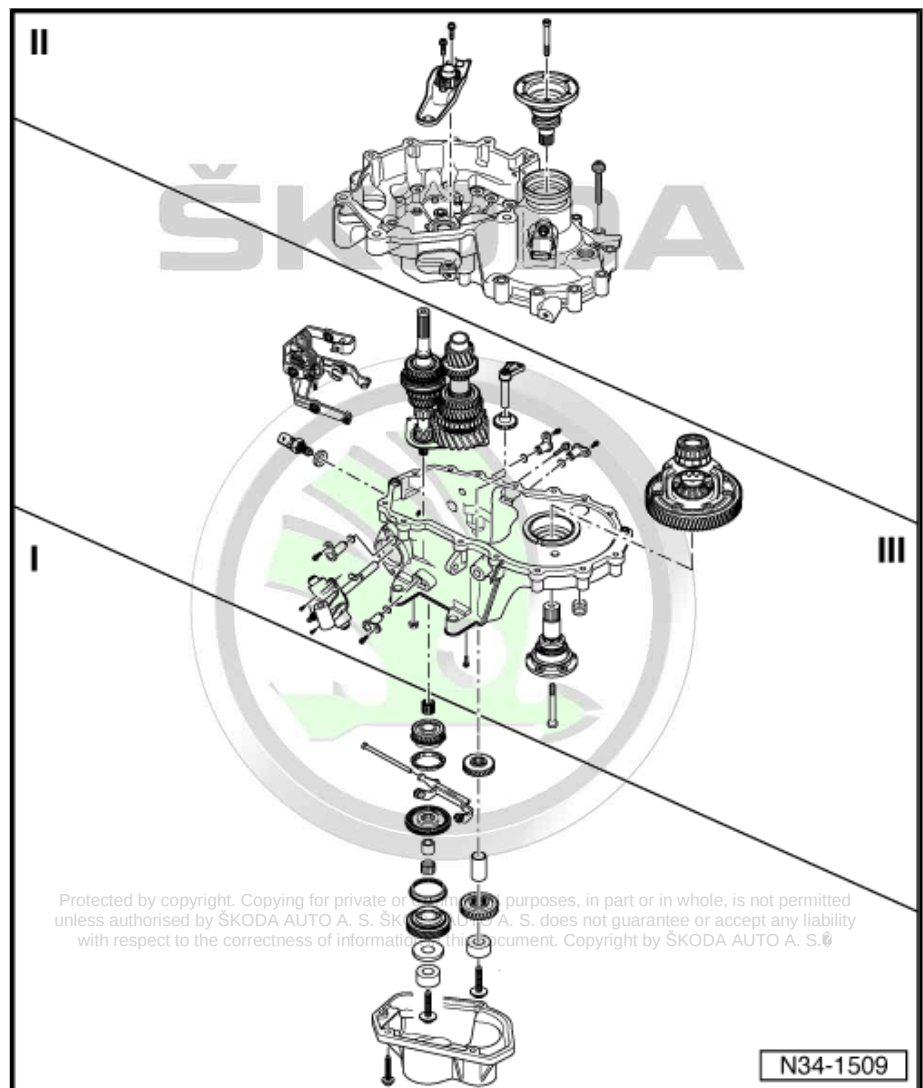
4.2 Summary of components

Mounting sequence ⇒ [page 78](#)

I - Removing and installing
gearbox housing cover and
5th/6th gear ⇒ [page 73](#)

II - Detaching and attaching
clutch housing ⇒ [page 75](#)

III - Removing and installing
the drive shaft, output shaft,
differential gear and shift forks
⇒ [page 77](#)



4.3 Removing and installing gearbox housing cover and 5th/6th gear

Special tools and workshop equipment required

- ◆ Sealant -AMV 188 200 03-



1 - Gearbox housing

- repairing ⇒ [page 88](#)

2 - 5th gear pinion

- removing and installing
⇒ [page 78](#)
- Fitting position
⇒ [page 84](#)

3 - Bushing

4 - 6th gear pinion

- Fitting position
⇒ [page 86](#)

5 - Inner ring/cylindrical-roller bearing

- for output shaft
- identify before removing
- do not interchange with inner ring/cylindrical-roller bearing of input shaft
- can be replaced separately

6 - Screw

- M8: 30 Nm and torque a further 90°
- M10 x 1: 75 Nm and torque a further 45°
- for output shaft
- self-locking
- always replace ⇒ Electronic Catalogue of Original Parts

7 - Cover for gearbox housing

- with cylindrical-roller bearing for drive shaft and for output shaft
- repairing ⇒ [page 91](#)

8 - 5 Nm and torque a further 90°

- always replace ⇒ Electronic Catalogue of Original Parts

9 - Screw

- M8: 30 Nm and torque a further 90°
- M10: 75 Nm + torque a further 45°
- for drive shaft
- self-locking
- always replace ⇒ Electronic Catalogue of Original Parts

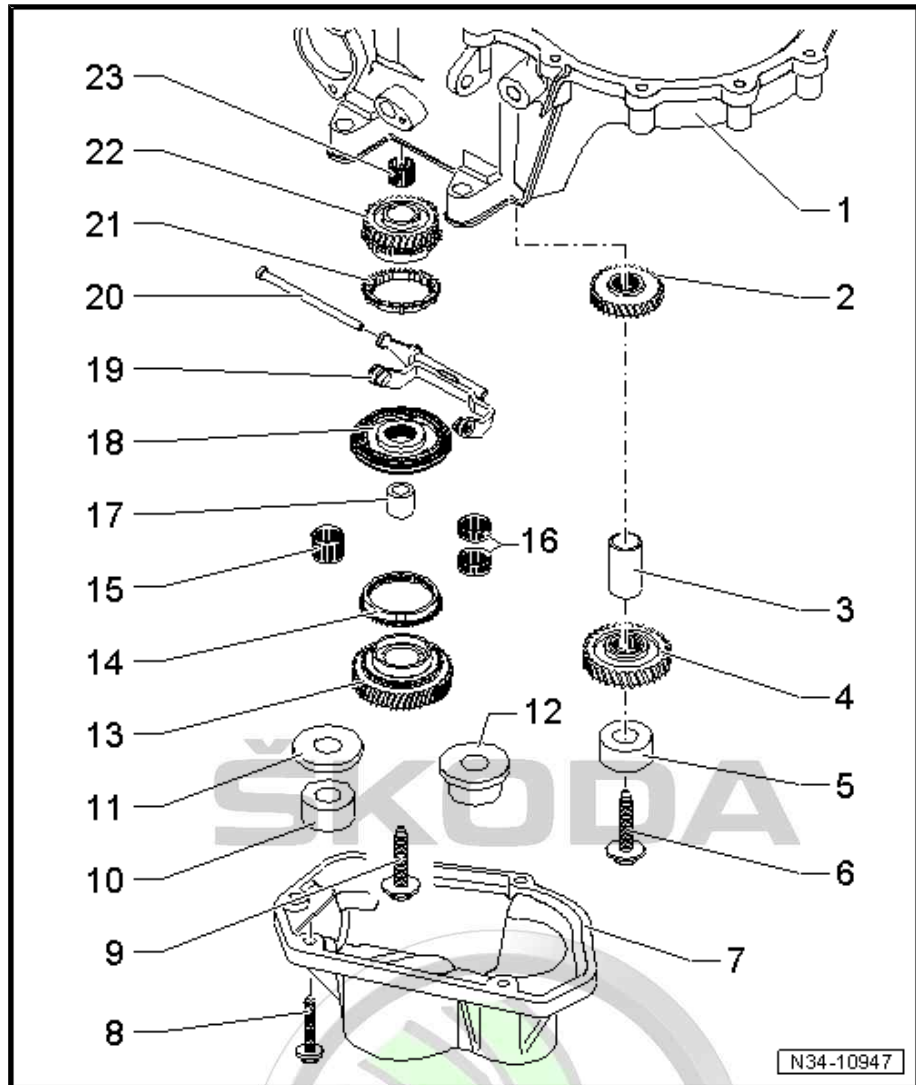
10 - Inner ring/cylindrical-roller bearing

- for drive shaft
- identify before removing
- do not interchange with inner ring/cylindrical-roller bearing of output shaft
- can be replaced separately

11 - Thrust washer

12 - Inner ring/cylindrical-roller bearing with thrust washer

- for drive shaft
- present on certain gearboxes





- ☐ assign according to the ⇒ Electronic catalogue of original parts .

13 - 6th gear sliding gear

14 - 6th gear synchronizer ring

15 - Needle bearing

- ☐ one-piece
- ☐ for 6th gear
- ☐ assign according to the ⇒ Electronic catalogue of original parts .
- ☐ replace together with bushing Pos. 17

16 - Needle bearing

- ☐ two-piece
- ☐ for 6th gear
- ☐ present on certain gearboxes
- ☐ assign according to the ⇒ Electronic catalogue of original parts .
- ☐ replace together with bushing Pos. 17

17 - Bushing

- ☐ for 6th gear needle bearing
- ☐ replace together with needle bearing Pos. 15 or 16

18 - Sliding sleeve with 5th and 6th gear synchronizer body

- ☐ disassembling and assembling ⇒ [page 99](#)

19 - 5th/6th gear shift fork

20 - Bearing bolt

- ☐ for 5th/6th gear shift fork

21 - 5th gear synchronizer ring

- ☐ is damaged by the drive shaft when removing
- ☐ always replace ⇒ Electronic Catalogue of Original Parts

22 - 5th gear sliding gear

23 - Needle bearing

- ☐ for 5th gear

4.4 Detaching and attaching clutch housing

Special tools and workshop equipment required

- ◆ Sealant -AMV 188 200 03-

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1 - Conical screw, 25 Nm

2 - Flange shaft with pressure spring

- ☐ removing and installing
⇒ [page 78](#)
- ☐ complete ⇒ [page 117](#)

3 - 5 Nm and torque a further 90°

- ☐ always replace ⇒ Electronic Catalogue of Original Parts

4 - Clutch housing

- ☐ repairing ⇒ [page 88](#)

5 - Gearbox housing

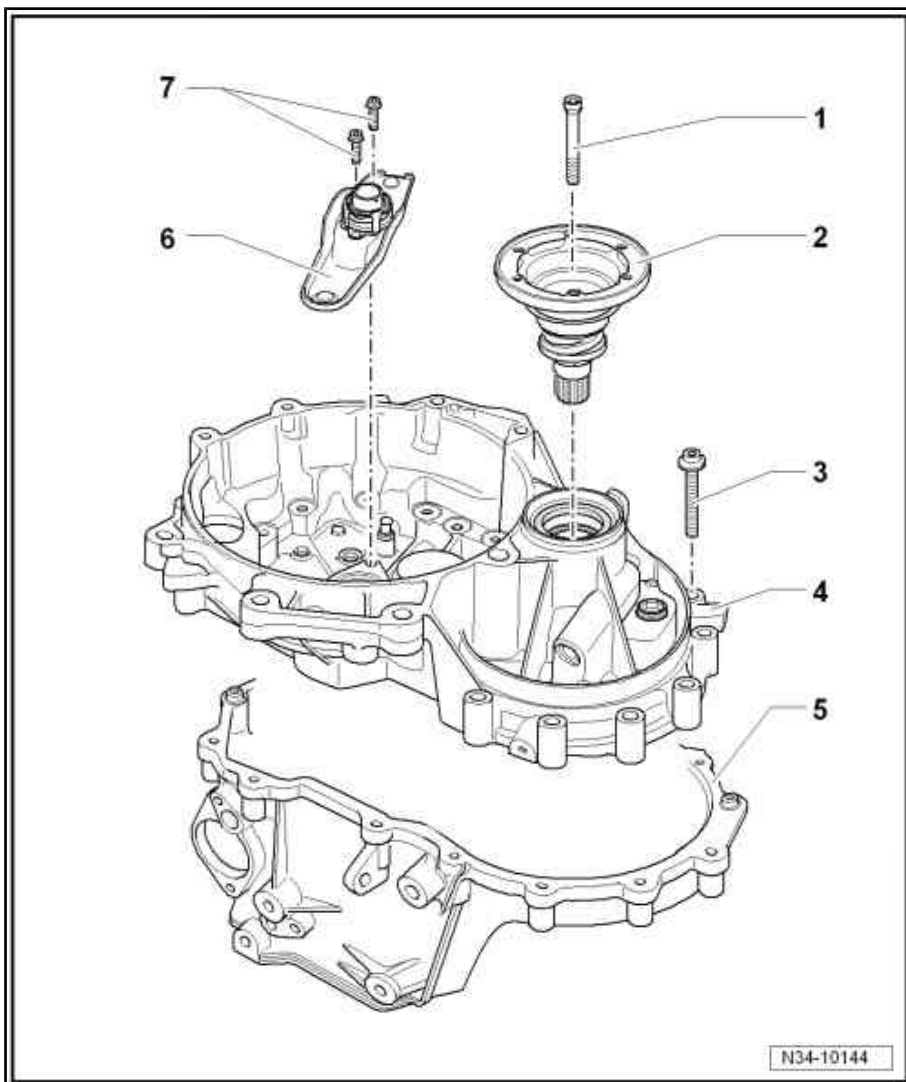
- ☐ repairing ⇒ [page 88](#)

6 - Clutch release lever

- ☐ with guide bushing and clutch release bearing
- ☐ removing and installing
⇒ [page 28](#)

7 - 5 Nm and torque a further 90°

- ☐ always replace ⇒ Electronic Catalogue of Original Parts



4.5 Removing and installing the drive shaft, output shaft, differential gear and shift forks

1 - Differential gear

- ☐ disassembling and assembling ⇒ [page 117](#)

2 - Gearbox housing

- ☐ repairing ⇒ [page 88](#)

3 - Oil drain plug

- ☐ Tightening torque ⇒ [page 71](#)
- ☐ different versions; assign via the ⇒ Electronic Catalogue of Original Parts

4 - Flange shaft with pressure spring

- ☐ removing and installing ⇒ [page 78](#)
- ☐ complete ⇒ [page 117](#)

5 - Conical screw, 25 Nm

6 - 5 Nm and torque a further 90°

- ☐ self-locking
- ☐ always replace ⇒ Electronic Catalogue of Original Parts
- ☐ to secure the bearing support with grooved ball bearings for the drive and output shaft Pos. 16

7 - 23 Nm

- ☐ for gearshift mechanism Pos. 15
- ☐ self-locking
- ☐ always replace ⇒ Electronic Catalogue of Original Parts

8 - O-ring

- ☐ always replace ⇒ Electronic Catalogue of Original Parts

9 - Bearing pins

10 - 5 Nm and torque a further 90°

- ☐ always replace ⇒ Electronic Catalogue of Original Parts

11 - Gearshift shaft with cover

- ☐ (Gearshift unit)
- ☐ disassembling and assembling ⇒ [page 93](#)

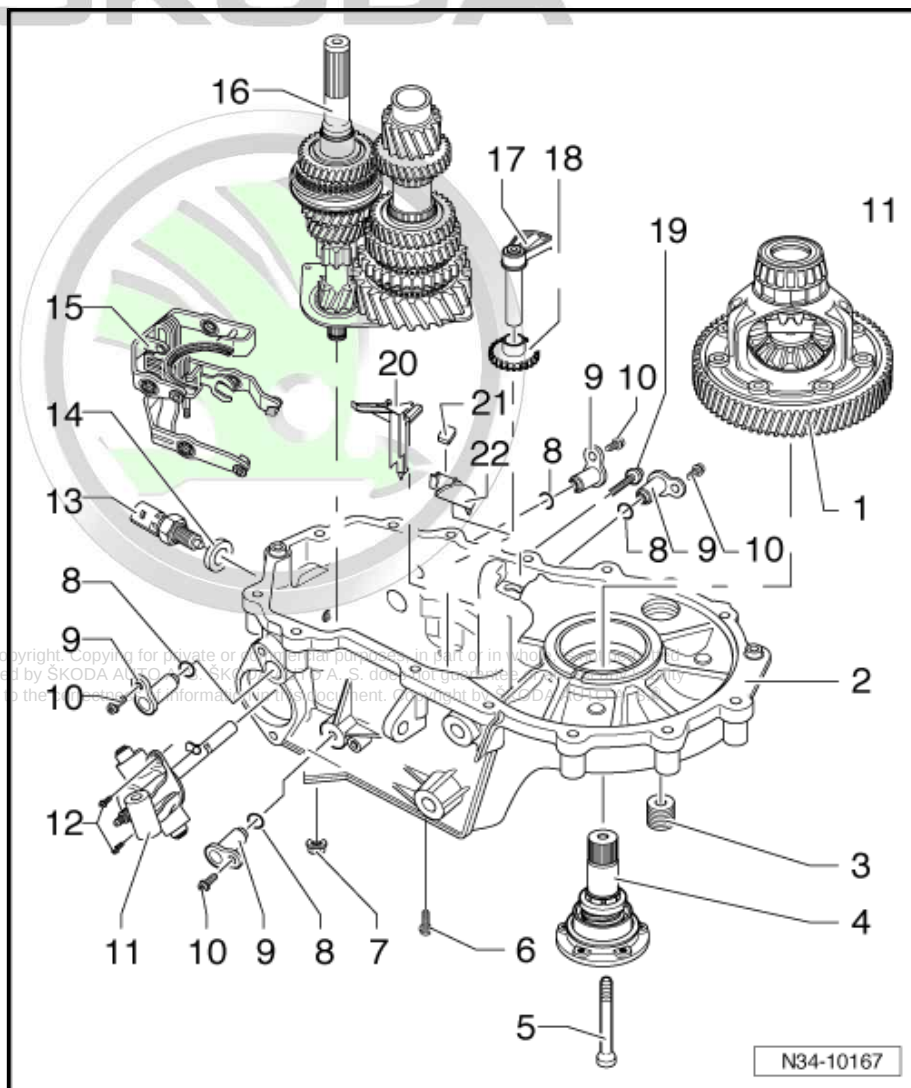
12 - 5 Nm and torque a further 90°

- ☐ always replace ⇒ Electronic Catalogue of Original Parts

13 - Reversing light switch -F4- , 20 Nm

14 - Gasket ring

- ☐ if present, always replace ⇒ Electronic Catalogue of Original Parts





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15 - Shift mechanism

- ☐ Gearshift forks
- ☐ disassembling and assembling ⇒ [page 96](#)

16 - Drive shaft and output shaft with bearing support for grooved ball bearings

- ☐ If the bearing support is released from the gearbox housing, it must always be replaced ⇒ Electronic Catalogue of Original Parts
- ☐ pressing off and on bearing support ⇒ [page 99](#)
- ☐ Disassembling and assembling the drive shaft ⇒ [page 99](#)
- ☐ Disassembling and assembling the output shaft ⇒ [page 107](#)

17 - Reverse shaft support

18 - Reverse gear wheel

19 - 25 Nm and torque a further 90°

- ☐ for reverse shaft support
- ☐ always replace ⇒ Electronic Catalogue of Original Parts

20 - Oil drip pan

21 - Magnet

22 - Oil guide part

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4.6 Mounting sequence

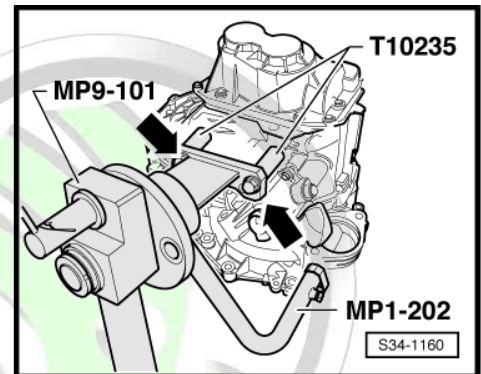
Removing and installing cover for gearbox housing, clutch housing, gearshift shaft with gearshift cover, drive shaft, output shaft, differential gear and gearshift mechanism.

Special tools and workshop equipment required

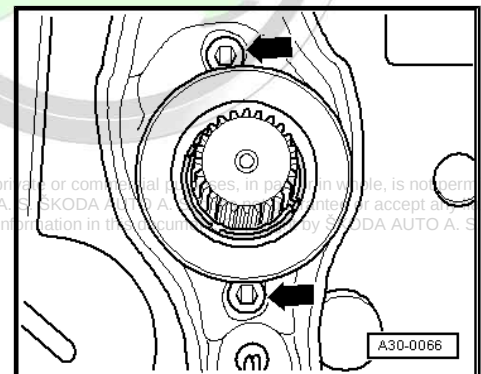
- ◆ Engine / gearbox mount - MP1-202 (VW 540)-
- ◆ Pressure plate -MP3-406 (VW 401)-
- ◆ Pressure plate -MP3-407 (VW 402)-
- ◆ Thrust piece -MP3-408 (VW 412)-
- ◆ Pipe section -MP3-409 (VW 418 A)-
- ◆ Thrust piece -MP3-423 (VW 407) -
- ◆ Assembly stand -MP9-101-
- ◆ Guide bolt -T10079-
- ◆ Thrust piece -T10080-
- ◆ Insert base -T10083-
- ◆ Adapter -T10235-
- ◆ Pressure washer -T10375-
- ◆ Assembly device -T30103 (30 - 506 B)-
- ◆ Two-arm extractor -Kukko 20/10-
- ◆ Extractor -Kukko 18/1-
- ◆ Separating device -Kukko 17/1-
- ◆ Sealant -AMV 188 200 03-
- ◆ Allen screw -M8 x 15-

4.6.1 Disassembling gearbox

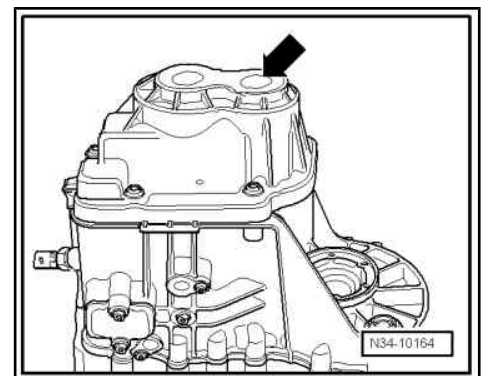
- Secure gearbox to the assembly stand -arrows-.
- Position catch pan underneath.
- Drain out gear oil.



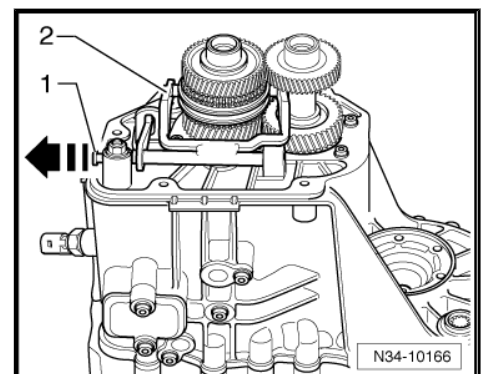
- Release screws -arrows-.
- Separate the clutch release lever together with the release bearing and guide bushing from the drive shaft and ball stud.
- Release fixing screw for right flange shaft. To this end insert two screws in the flange and counterhold the flange shaft using a tyre iron.
- Pull out the flange shaft with pressure spring, stop disc and conical ring.



- Unscrew the cover -arrow- for the gearbox housing carefully remove.



- Pull out the bearing bolt -1- for the 5th/6th gear shift fork -2- in -direction of arrow- and remove gearshift fork.

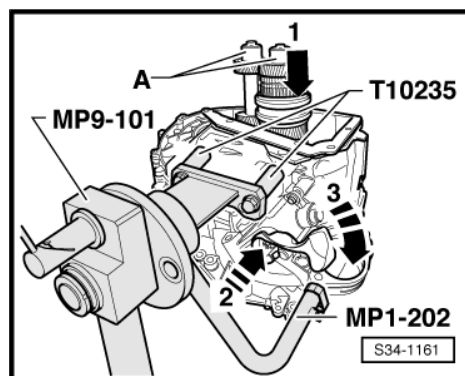


- Unscrew screws -°A- for inner rings of the bearing on the input and output shaft, to this end engage the 5th gear -arrow°1- and the 1st °gear -arrow°2- and -arrow 3-.
- The input and output shafts are blocked after enagaging both gears. Now it is possible to release the two bolts.



Note

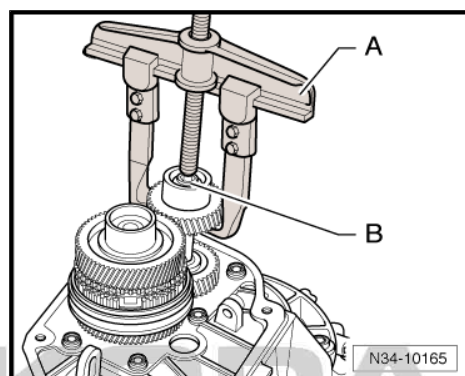
If the shafts are not replaced, carefully clean the threaded holes e.g. using a thread tap to remove locking agent residues.



- Remove 6th gear pinion with inner ring/cylindrical-roller bearing for output shaft.

A - Two-arm extractor -Kukko 20/10-

B - Allen screw -M8 x 15-



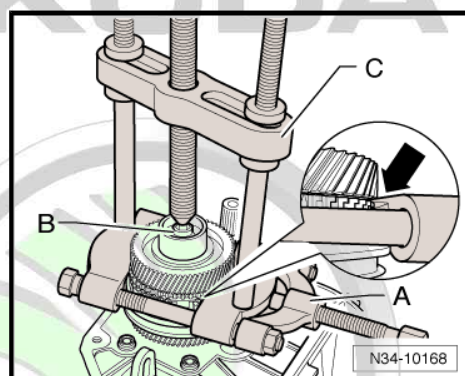
- Insert the separating device - Kukko 17/1- -A- behind the running gearing (not the engaging gearing) of the 6th gear sliding gear -arrow-.

A - Separating device -Kukko 17/1-

B - Allen screw -M8 x 15-

C - Extractor -Kukko 18/1-

- Remove 6th°gear pinion with inner ring/cylindrical-roller bearing for input shaft and thrust washer.
- Remove the sliding sleeve for 5th/6th °gear with the arresters.



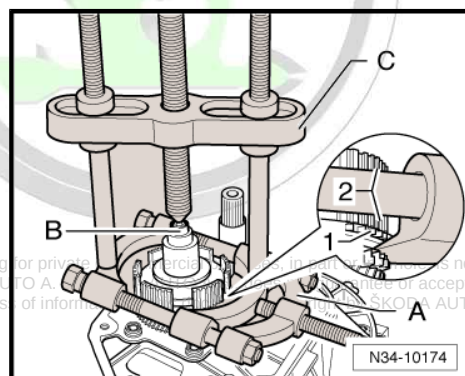
- Insert the separating device - Kukko 17/1- -A- below the synchronizer ring of the 5th gear -1-. The synchronizer ring is thereby pressed onto the synchronizer body -2-.

A - Separating device -Kukko 17/1-

B - Allen screw - M8 x 15-

C - Extractor -Kukko 18/1-

- Pull off 5th/6th °gear synchronizer body with inner ring for 6th °gear needle bearing and 5th °gear synchronizer ring.

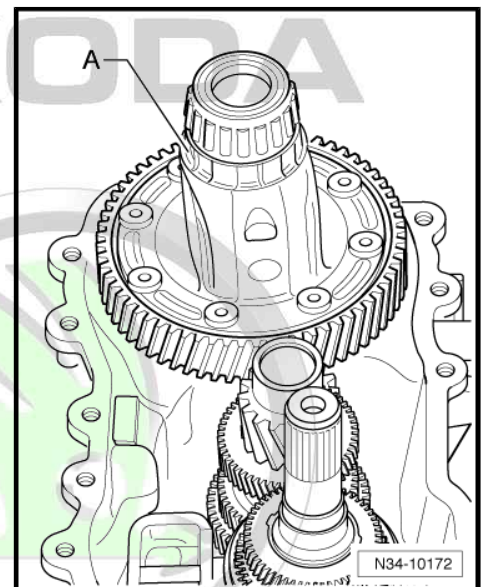
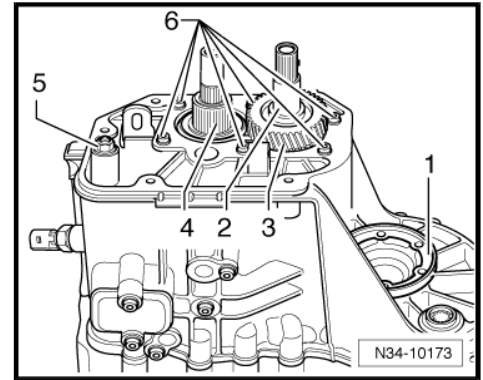


Note

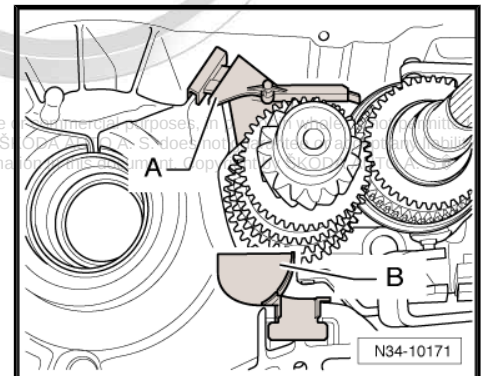
The 5th °gear synchronizer ring must always be replaced after removing ⇒ Electronic catalogue of original parts .

- Unscrew the fixing screw for the left flange shaft -1-, to this end insert two screws in the flange and counterhold the flange shaft using a tyre iron.

- Remove the flange shaft -1- with pressure spring.
- Remove the bushing -2- and the 5th °gear sliding gear with needle bearing -4-.
- Unscrew hexagon collar nut -5- for shift mechanism (fitting of the reverse gear).
- Release the fixing screws -6- for the bearing support of the drive shaft and output shaft.
- The 5th °gear pinion -3- is later pressed off when removing the bearing support for the grooved ball bearings ⇒ [page 99](#) .
- Turn the gearbox in the assembly support with the clutch housing upwards.
- Release fixing screws, that serve to secure the gearbox housing from the clutch housing.
- Carefully release the clutch housing from the projecting housing lands and make sure the sealing surfaces are not damaged in the process.
- When removing, the clutch housing must not tilt so that the roller bearing and the bearing assembly on the drive shaft and the output shaft are not damaged.
- Remove the differential gear -A- from the gearbox housing.

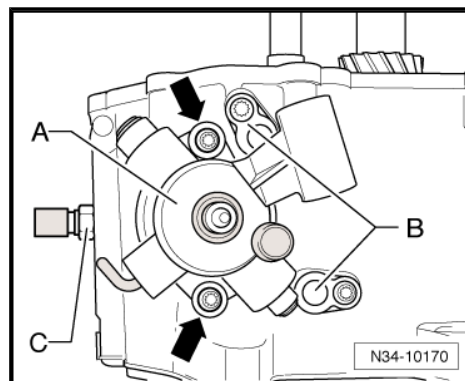


- Afterwards, remove the oil drip pan -A- and the oil guide part -B- with the solenoid from the gearbox housing.



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- Remove the gearshift shaft with cover -A-. To do so put the gearshift shaft into Neutral. Subsequently unscrew screws -arrows- and remove the gearshift shaft from the gearbox housing.
- Remove the bearing pins -B- at the top of the gearbox.
- Unscrew the reversing lights switch -F4- -C-.

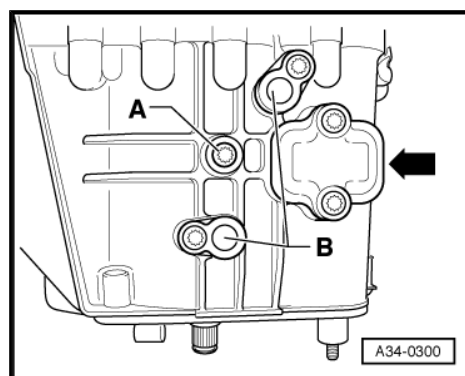


- Unscrew screw -A- for securing the reverse wheel shaft.
- Remove the bearing pins -B- at the gearbox bottom side.



Note

Do not remove the cover -arrow- to disassemble the gearbox.

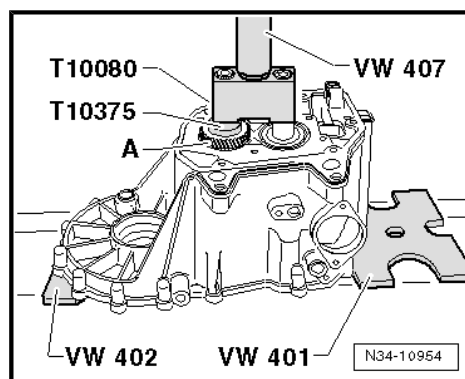


- Press off the drive shaft and output shaft together with the 5th gear sliding gear -A-, bearing support, gearshift mechanism (shift forks) and reverse gear.



Note

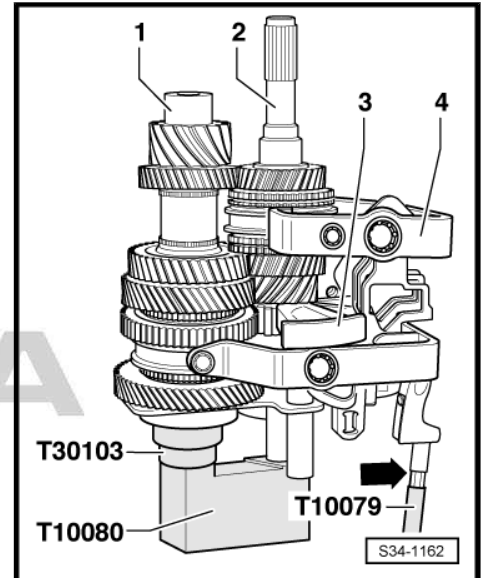
- ◆ Position the gearbox housing in such a way that the dowel sleeves in the gearbox housing are not damaged.
- ◆ During the pressing off procedure request the assistance of second mechanic to prevent components from falling.
- Pressing off the drive and output shafts from the bearing support with grooved ball bearings and 5th gear pinion
⇒ [page 99](#) .



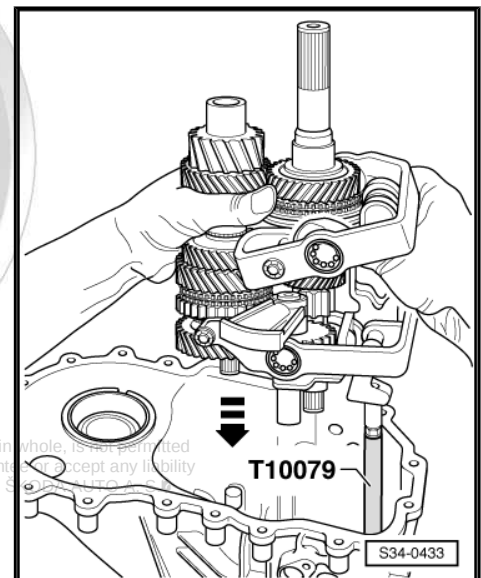
4.6.2 Assembling together

- Press the drive and output shaft into the bearing support for grooved ball bearings ⇒ [page 99](#) .
- Pressing the sleeve of the 5th gear sliding gear needle bearing onto the drive shaft ⇒ [page 99](#) .

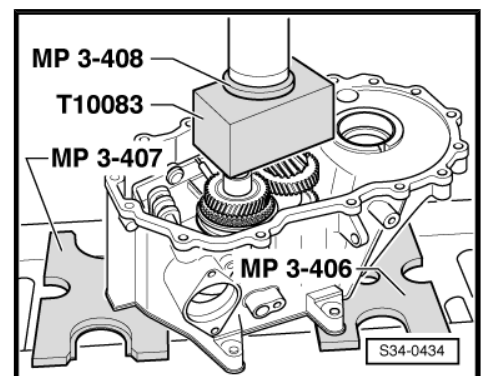
- Place the assembled components drive shaft -2-, output shaft -1- with bearing support for grooved ball bearings in the pressure plate -T10080- .
- Insert the gearshift mechanism (shift forks) -4- in the sliding sleeves of the shaft.
- Insert reverse shaft support -3- with reverse gear wheel.
- Screw guide bolt - T10079- to the fitting of the reverse gear -arrow-.



- Insert the components together into the gearbox housing, by passing the guide bolt -T10079- through the fixing holes of the gearshift mechanism in the gearbox housing.
- Unscrew guide bolt - T10079- .
- Before pressing the bearing support check whether the shift forks are properly engaged in the sliding sleeves.



- Carefully press on the bearing support with the drive and output shaft up to the arrester.



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- Tighten screw -A- for reverse wheel shaft.
- Install the bearing pins -B- at the bottom of the gearbox.

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- Screw on the reversing lights switch -F4- -C-.
- Install the bearing pins -B- at the top of the gearbox.
- Put the gearshift forks into Neutral.
- Apply sealant -AMV 188 200 03- uniformly on the sealing surfaces of the cover.
- Install the gearshift shaft with cover -A-. Subsequently tighten the screws -arrows-.

- Use new screws -A- to secure the bearing support to the drive shaft and output shaft.



Note

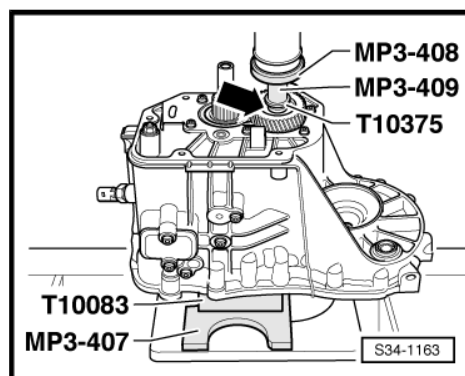
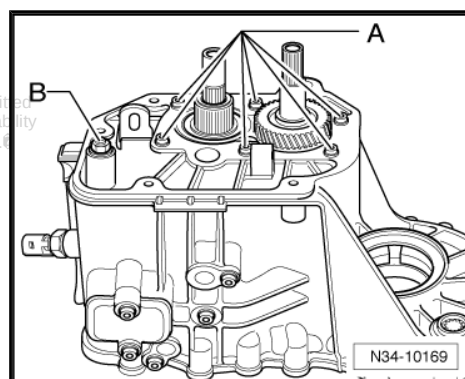
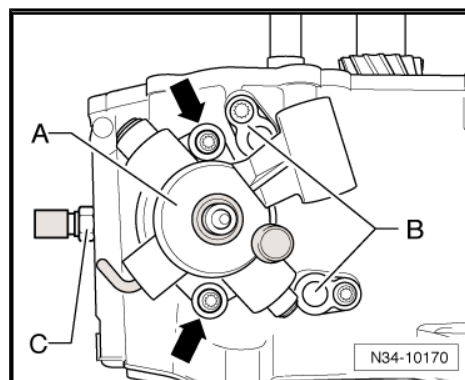
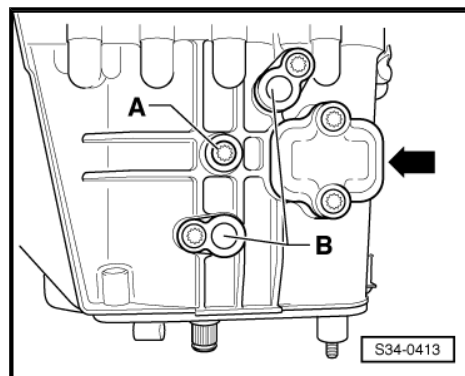
Gradually tighten the screws -A- according to the given torque starting from the middle and crosswise.

- Tighten hexagon nut -B- for the gearshift mechanism (shift forks).
- Insert the drive and output shafts together with the gearbox housing in the insert base -T10083- .

Fitting position press on 5th °gear pinion and 5th °gear pinion

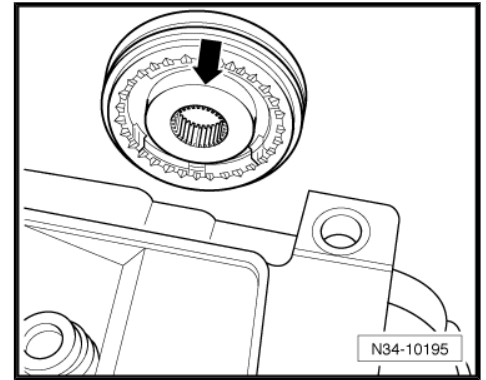
The highest collar -arrow- points to the gearbox housing cover.

- Pressing on 5th °gear pinion.
- Mount the 5th gear sliding gear with needle bearing.
- Position the 5th gear synchronizer ring on the sliding gear.

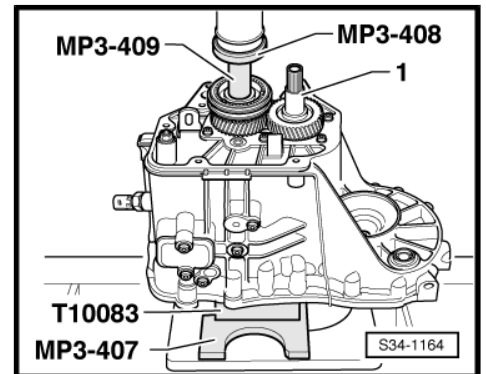


Fitting position of the 5th/6th gear synchronizer body/sliding sleeve

The high collar -arrow- points to the 5th °gear and to the gearbox housing.



- Press on the synchronizer body/5th/6th °gear sliding sleeve.
- Mount bushing -1- onto the 5th °gear pinion.



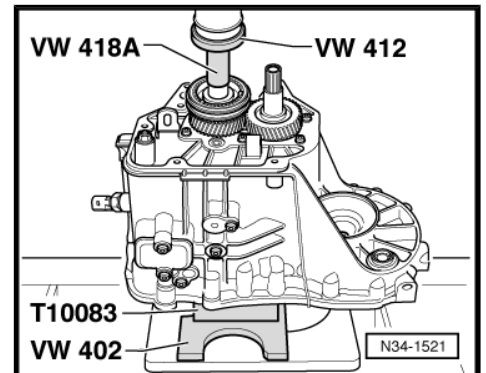
- Heat the inner ring for the 6th gear needle bearing to max. 100 °C and press on.



WARNING

Wear protective gloves!

- Mount the 6th °gear sliding gear with needle bearing and synchronizer ring.

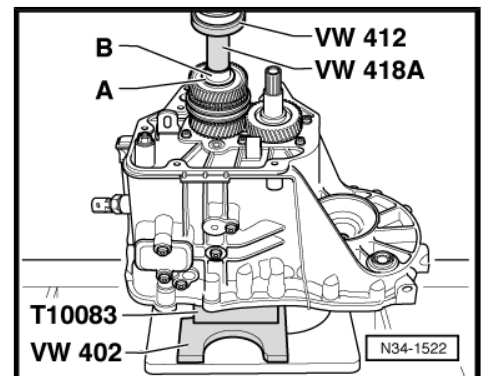


- Place on the thrust washer -A-.



Note

- ◆ Do not interchange inner rings/cylindrical-roller bearings for input and output shafts.
- ◆ On certain gearboxes, the thrust washer -A- and the inner ring/cylindrical-roller bearing -B- are combined in one component part.
- Then they can only be pressed on together.



WARNING

Wear protective gloves!

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- Heat the inner ring/cylindrical-roller bearing -B- to max. 100 °C and press onto the drive shaft.

Fitting position of the 6th gear pinion:

The high collar points to the bushing.

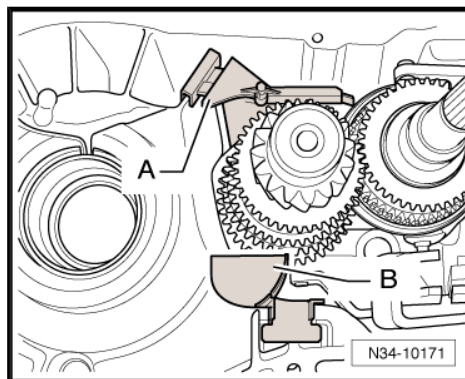
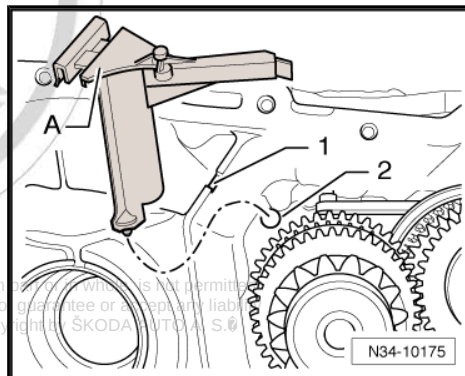
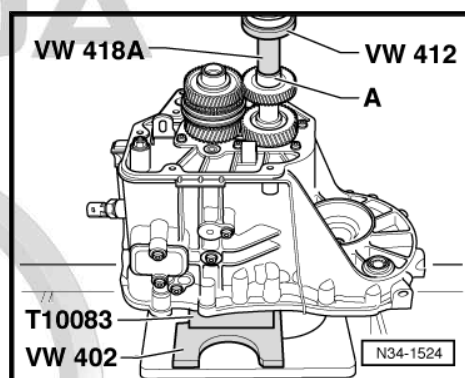
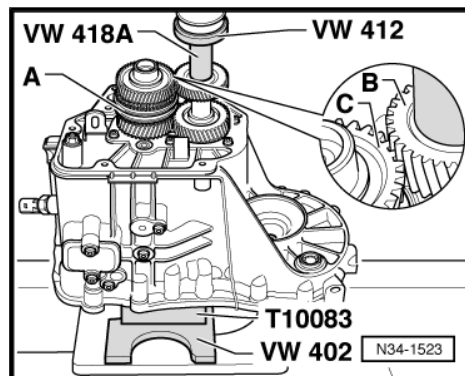
- Shift the sliding sleeve -A- for 5th/6th °gear into idle position so that through this the 6th °gear sliding gear can turn during the pressing on of the 6th °gear pinion.



WARNING

Wear protective gloves!

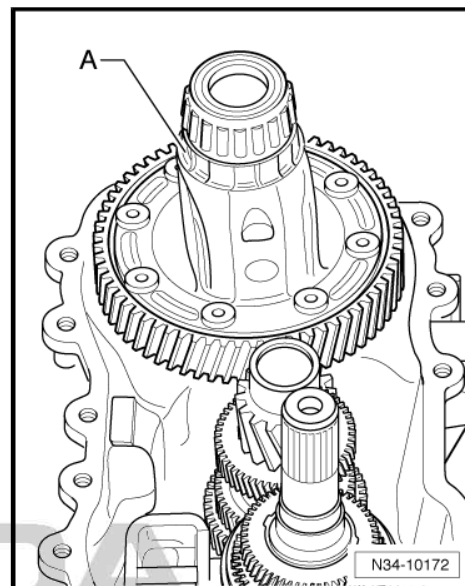
- Heat the 6th gear pinion to max. 100 °C.
- Press on 6th °gear sliding gear, while doing so ensure that the serration of the pinion -B- for the 6th gear and the 6th °gear sliding gear -C- are in mesh.
- Heat the inner ring/cylindrical-roller bearing -A- to max. 100° C and press onto the output shaft.
- Afterwards, insert the oil drip pan -A- into the recess -1- and into the hole -2- of the gearbox housing.



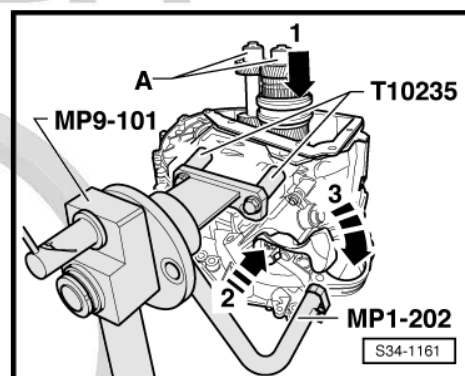
- Now position the oil guide part -B- into the gearbox housing.
- The solenoid is placed in the oil guide part -B-.

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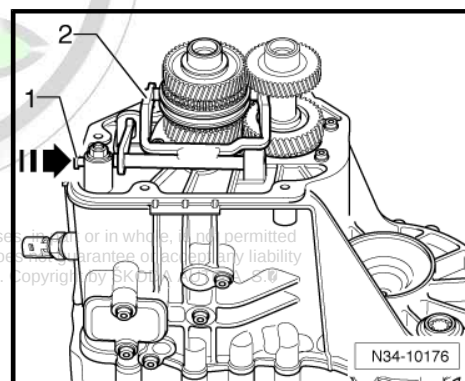
- Insert differential gear -A-.
- Apply sealant -AMV 188 200 03- uniformly on the sealing surface.
- Screw down the clutch housing onto the gearbox housing.
- Turn the gearbox in the assembly support with the clutch housing upwards.



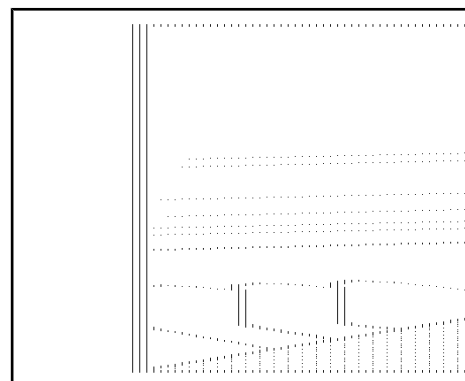
- Before tightening the fixing screws -A-, 2 gears must be engaged -arrow°1- to -arrow 3-.



- Insert the 5th/6th gear shift fork -2- and push the bearing bolt -1- up to the stop -direction of arrow-.
- Apply sealant -AMV 188 200 03- uniformly on the sealing surface.
- Tighten cover for gearbox housing.



- Install both flange shafts with pressure springs, stop discs and conical rings.
- Install the clutch release lever together with the release bearing and guide bushing ⇒ [page 28](#) .
- Pour in gear oil ⇒ [page 71](#) .



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5 Repairing gearbox housing and clutch housing

Special tools and workshop equipment required

- ◆ Thrust piece -MP3-448 (VW 408 A)-
- ◆ Centering mandrel -MP3-463 (12-551)-
- ◆ Socket wrench insert -T30023 (3357)-
- ◆ Thrust piece -T40008-
- ◆ Sealant -AMV 188 200 03-

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1 - Clutch housing

- ☐ when replacing: Set the differential gear
⇒ [page 121](#)

2 - Gasket ring for drive shaft

- ☐ release with a screwdriver
- ☐ inserting ⇒ [page 89](#)

3 - Ball stud, 20 Nm

- ☐ remove previous grease
- ☐ grease with grease for plug serration of clutch disc -G 000 100-

4 - Gasket ring

- ☐ for right flange shaft
- ☐ replace with installed gearbox ⇒ [page 115](#)

5 - Oil filler plug

- ☐ Tightening torque
⇒ [page 71](#)
- ☐ different versions
⇒ [page 71](#)
- ☐ if necessary screw and unscrew with socket wrench insert -T30023-

6 - Adjusting washer

- ☐ for the differential gear
- ☐ Determine thickness
⇒ [page 121](#)

7 - Outer ring/tapered-roller bearing

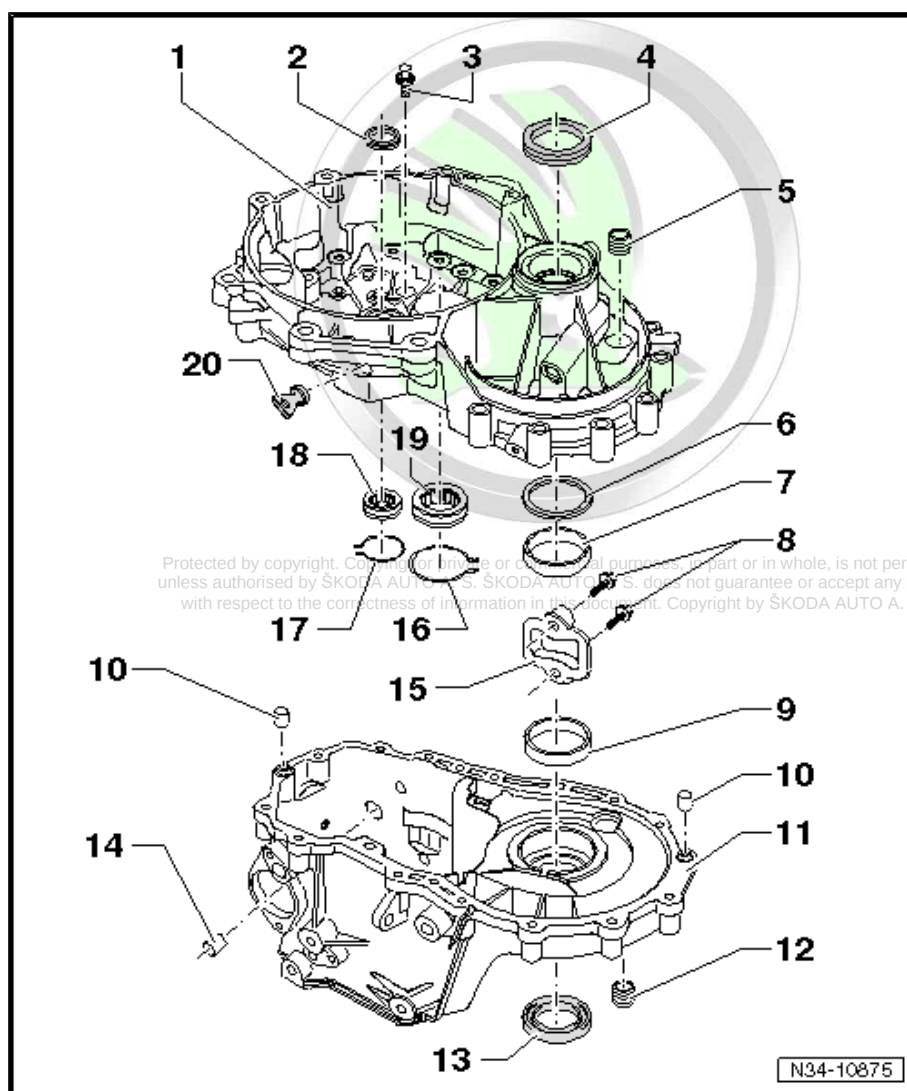
- ☐ for the differential gear
- ☐ removing and installing ⇒ [page 117](#)
- ☐ when replacing: Set the differential gear ⇒ [page 121](#)

8 - 5 Nm and torque a further 90°

- ☐ always replace ⇒ Electronic Catalogue of Original Parts

9 - Outer ring/tapered-roller bearing

- ☐ for the differential gear
- ☐ removing and installing ⇒ [page 117](#)
- ☐ when replacing: Set the differential gear ⇒ [page 121](#)





10 - Fitting sleeve

- ☐ 2 pieces

11 - Gearbox housing

- ☐ when replacing: Set the differential gear ➔ [page 121](#)

12 - Oil drain plug

- ☐ Tightening torque ➔ [page 71](#)
- ☐ different versions ➔ [page 71](#)
- ☐ if necessary screw and unscrew with socket wrench insert -T30023-

13 - Gasket ring

- ☐ for left flange shaft
- ☐ replace with installed gearbox ➔ [page 114](#)

14 - Bushing

- ☐ for the gearshift shaft
- ☐ extracting ➔ [page 90](#)
- ☐ inserting ➔ [page 90](#)

15 - Screw cap

- ☐ Before screwing down apply -AMV 188 200 03- to the sealing surface

16 - Circlip

- ☐ insert in the nut of the cylinder roller bearing groove Pos. 19

17 - Circlip

- ☐ insert in the nut of the cylinder roller bearing groove Pos. 18

18 - Cylindrical-roller bearing

- ☐ for drive shaft
- ☐ removing and installing ➔ [page 99](#)

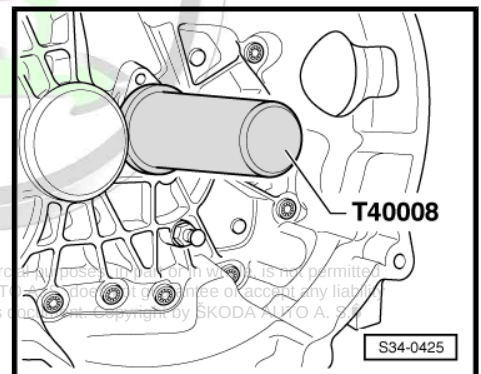
19 - Cylindrical-roller bearing

- ☐ for output shaft
- ☐ removing and installing ➔ [page 107](#)

20 - Screw cap

- ☐ present on certain gearboxes
- ☐ insert in the holes of the clutch housing

Insert the gasket ring for the drive shaft until flush

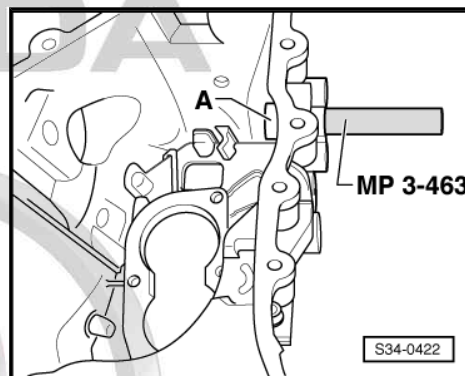


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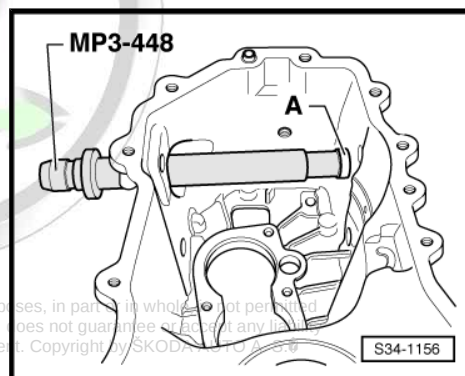
S34-0425



Remove the bushing -A- for the shiftgear shaft



Drive in the bushing -A- for the shift rod up to the stop



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6 Repairing gearbox housing cover

Special tools and workshop equipment required

- ◆ Pressure plate -MP3-407 (VW 402)-
- ◆ Thrust piece -MP3-408 (VW 412)-
- ◆ Drive bushing -MP3-427 (40-21)-
- ◆ Pressure plate -T10084 A-
- ◆ Interior extractor 30...37 mm , e.g. -Kukko 21/5-
- ◆ Countersupport , e.g. -Kukko 22/2-
- ◆ Hot air blower , e.g. -V.A.G 1416-

1 - Countersunk screw, 2 Nm

- ☐ tighten crosswise

2 - Bearing plate

- ☐ for cylindrical-roller bearing
- ☐ Fitting position: countersunk for countersunk screws point to the gearbox housing

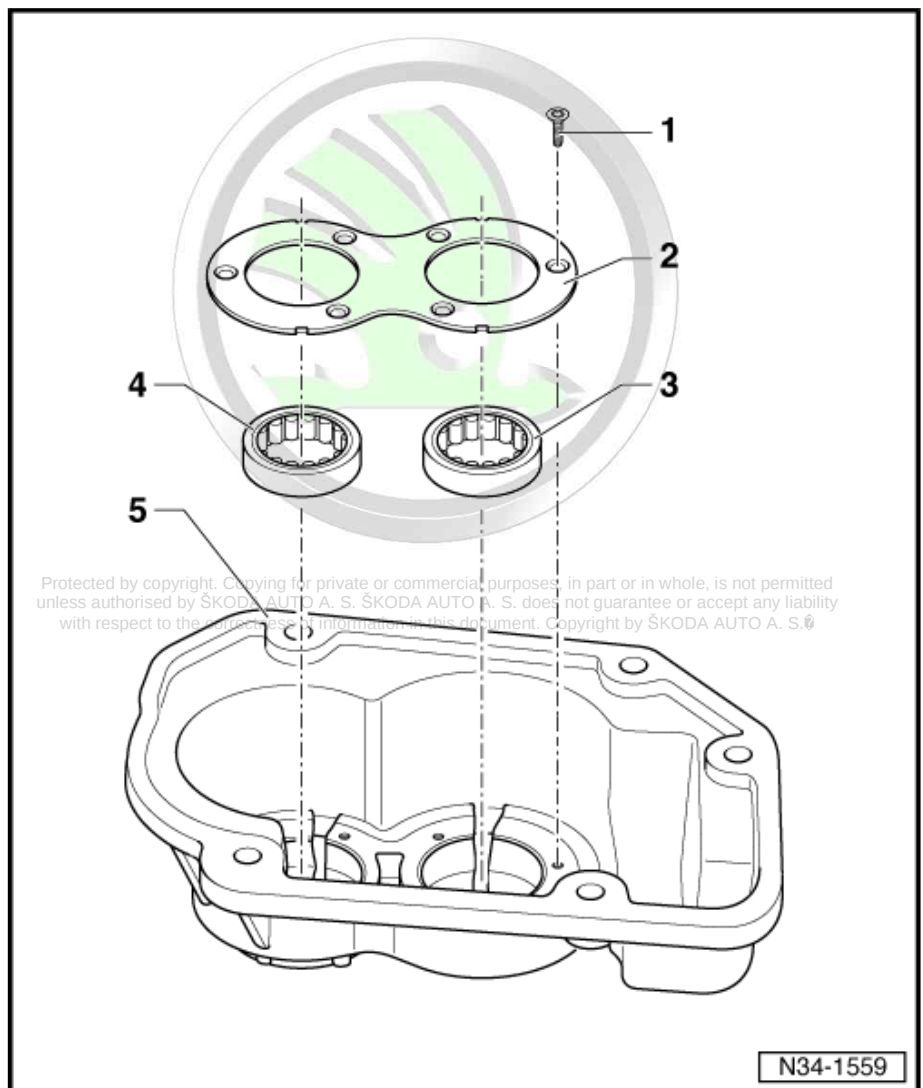
3 - Cylindrical-roller bearing

- ☐ for drive shaft
- ☐ do not interchange with cylindrical-roller bearing for output shaft
- ☐ can be replaced separately
- ☐ removing ⇒ [page 92](#)
- ☐ installing ⇒ [page 92](#)

4 - Cylindrical-roller bearing

- ☐ for output shaft
- ☐ do not interchange with cylindrical-roller bearing for input shaft
- ☐ can be replaced separately
- ☐ removing ⇒ [page 92](#)
- ☐ installing ⇒ [page 92](#)

5 - Cover for gearbox housing

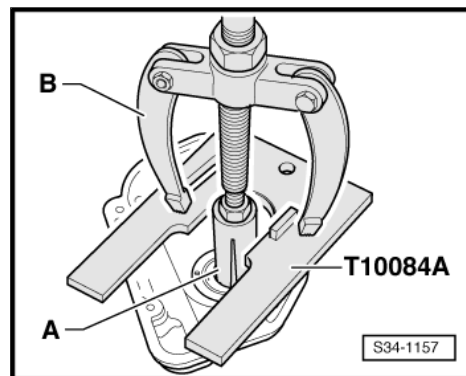




Pull the cylindrical-roller bearing out of the gearbox cover

A - Interior extractor 30...37 mm , e.g. -Kukko 21/5-

B - Countersupport , e.g. -Kukko 22/2-



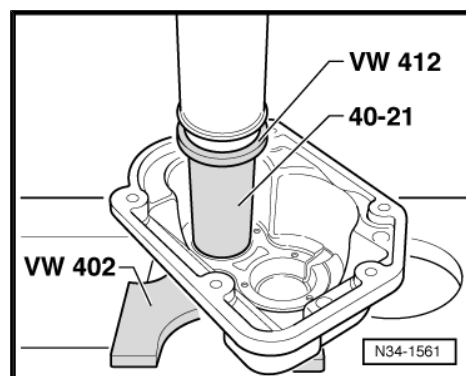
Press cylindrical-roller bearing into cover for gearbox housing

- Heat the cover for gearbox housing with the hot-air blower , e.g. -V.A.G 1416- in the area of the bearing pedestals to approx. 100°C.
- Insert the cylindrical-roller bearing in the heated gearbox and press down under the workshop press until heat is transferred.



Note

Cylindrical-roller bearing must be pressed into the cover up to the stop. Do not tighten in the opposite direction with the countersunk screws across the bearing plate.



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7 Disassembling and assembling the gearshift unit (gearshift shaft with cover)

Special tools and workshop equipment required

- ◆ Pipe section -MP3-479 (VW 423)-
- ◆ Thrust piece -T10203-

1 - Bushing

- ☐ for the gearshift shaft
- ☐ extracting and inserting
⇒ [page 88](#) flush

2 - Gearshift shaft with cover

- ☐ replace jointly

3 - Locking bolt

- ☐ for setting the gearshift mechanism
- ☐ removing ⇒ [page 94](#)
- ☐ inserting ⇒ [page 94](#)

4 - Reversing lever

- ☐ Fitting position
⇒ [page 48](#)
- ☐ after installing set shift mechanism ⇒ [page 59](#)
- ☐ remove and install together with cable lock for selector cable
⇒ [page 48](#)
- ☐ on certain vehicles, the relay lever is secured with the clip on the gearshift cover ⇒ [page 95](#)

5 - Gasket ring

- ☐ for the gearshift shaft
- ☐ lever out with screwdriver
- ☐ inserting ⇒ [page 94](#)

6 - Cap

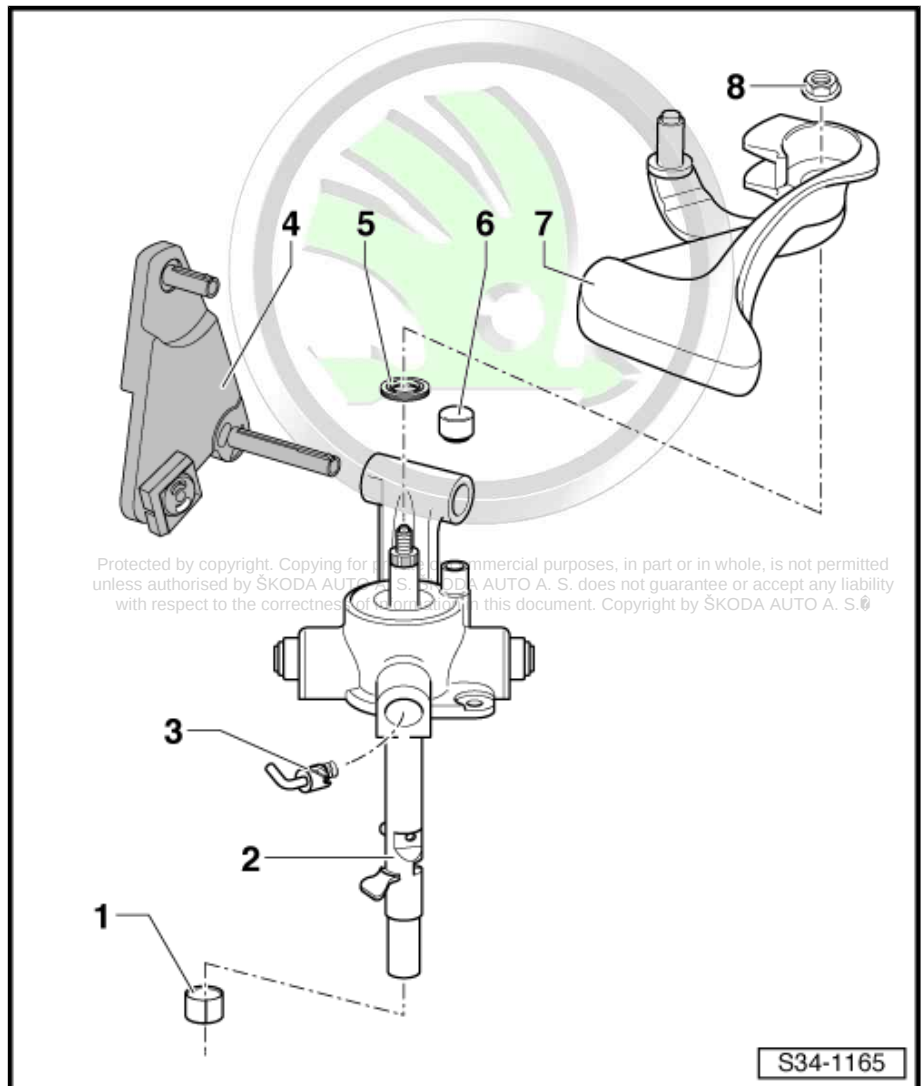
- ☐ for gearbox bleeder

7 - Gearbox shift lever

- ☐ with balancing weight
- ☐ insert in such a way that the interrupted spacing of the teeth matches the gearshift shaft ⇒ [page 95](#)
- ☐ may be replaced with the gearshift mechanism mounted
- ☐ Fitting position ⇒ [page 48](#)

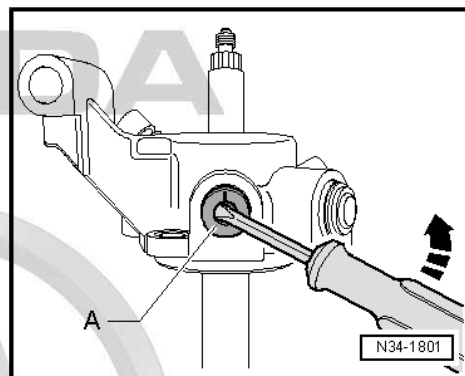
8 - 20 Nm

- ☐ replace ⇒ Electronic Catalogue of Original Parts



Remove locking bolt -A- from gearshift cover

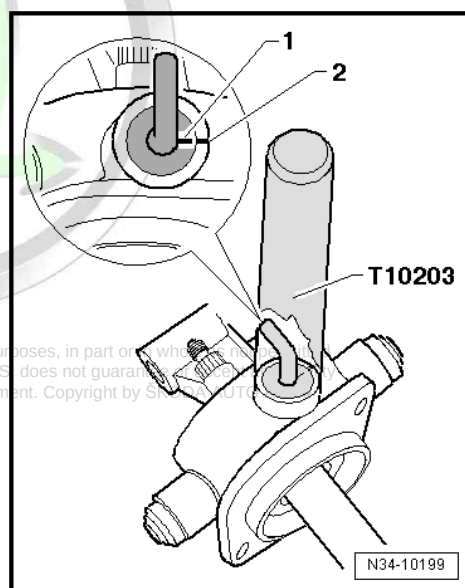
- Remove the outer part of the locking bolt.
- Then lever out locking bolt carefully with a screwdriver.



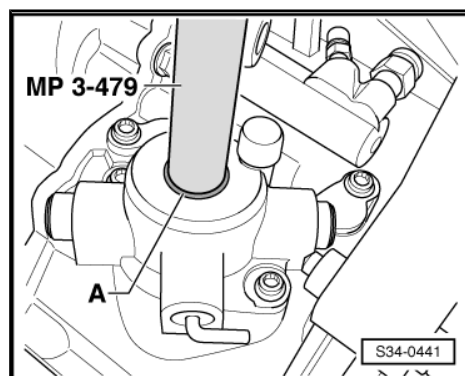
Drive locking bolt into gearshift cover

Fitting position:

The marking -1- points towards the marking -2- on the gearshift cover.

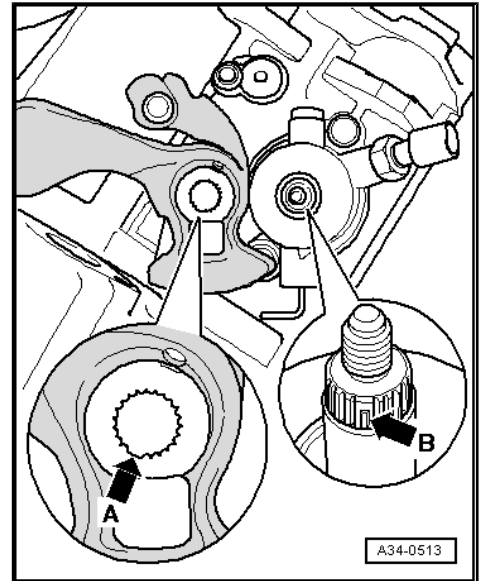


Insert gasket ring -A- up to the stop



Install gearshift lever

- When positioning the gearshift lever, make sure that the tooth opening -arrow A- is located above the interrupted spacing of the teeth for the gearshift shaft -arrow B-.



remove and install relay lever with clip -arrow 1-

- Remove the clip -arrow 1- and the relay lever together with the cable lock -arrow 2-.



To install, grease bearing points and friction surfaces with grease -G 000 450 02-.

- Insert the relay lever together with the cable lock up to the stop in the gearshift cover.
- Insert the clip -arrow 1- in the hole of the relay lever.
- Pay attention to secure catch of the clip.



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8 Disassembling and assembling the gearshift forks

Special tools and workshop equipment required

- ◆ Driver -MP1-304 (10-206)-
- ◆ Pressure plate -MP3-407 (VW 402)-
- ◆ Thrust piece -MP3-453 (VW 431)-
- ◆ Spacer sleeve -MP3-458/2 (VW 472/2)-
- ◆ Assembly device -MP5-402 (3301)-
- ◆ Removal tool for inner lining of the door panel -MP8-602/1 (80-200)-
- ◆ Assembly device -T30100 (3290)-



Note

The gearshift fork group Pos. 1 does not have to be disassembled for the disassembly and assembly of the shift segments, circlips and if necessary angular ball bearings.

1 - Gearshift fork group with shift rails

2 - 3rd/4th gear shift segment

- ☐ It must still be possible to rotate the shift segment freely once fitted
- ☐ Identification
⇒ [page 97](#)

3 - Angular ball bearing

- ☐ 4 pieces
- ☐ removing ⇒ [page 98](#)
- ☐ installing ⇒ [page 98](#)

4 - Circlip

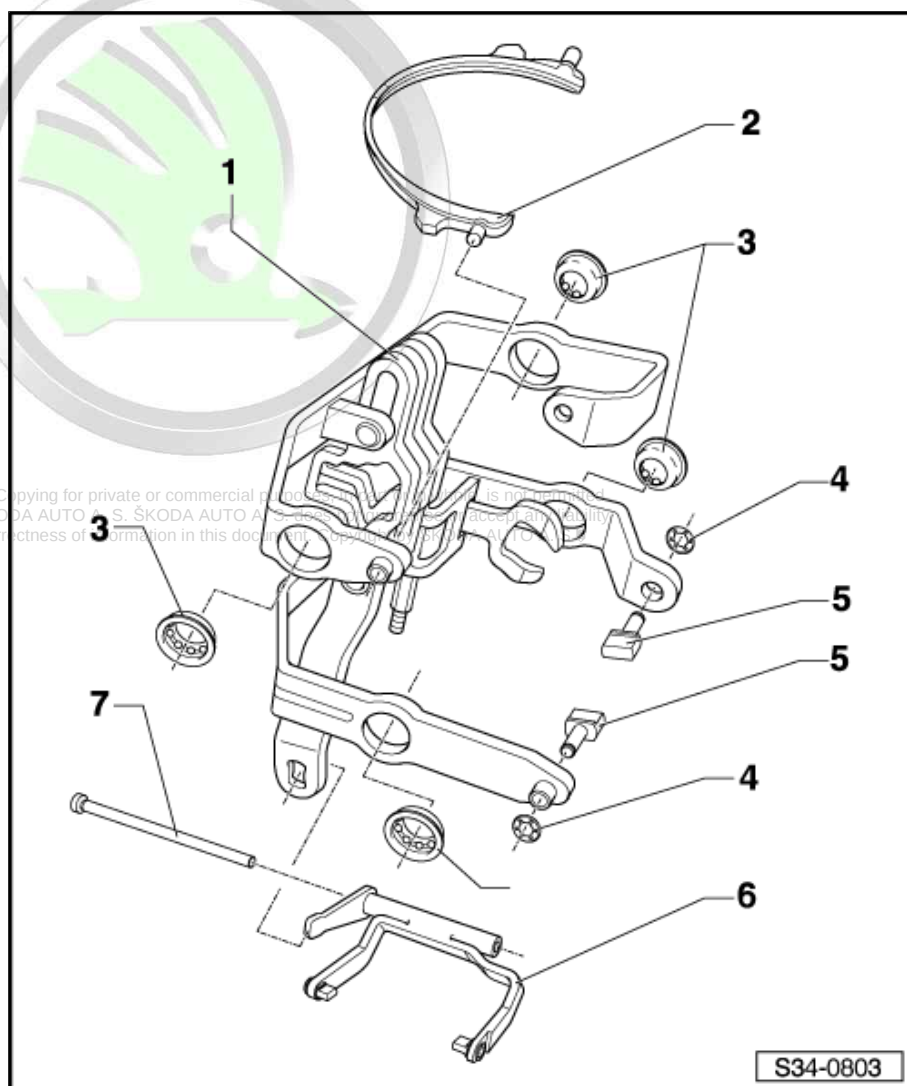
- ☐ always replace ⇒ [Electronic Catalogue of Original Parts](#)
- ☐ removing ⇒ [page 97](#)
- ☐ installing ⇒ [page 98](#)

5 - 1st/2nd gear shift segment

- ☐ Identification
⇒ [page 97](#)
- ☐ It must still be possible to rotate the segment freely once the circlip has been fitted
- ☐ Gearshift fork with shift segment ⇒ [page 97](#)

6 - 5th/6th gear shift fork with shift segments

- ☐ Shift segments are connected inseparably with the gearshift fork



- ❑ Identification
 - ⇒ [page 97](#)

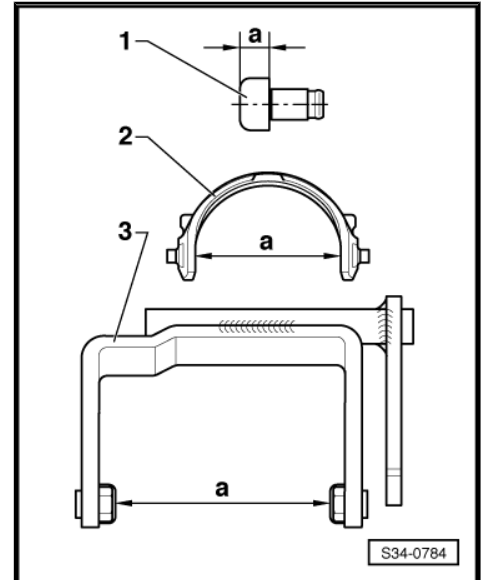
7 - Bearing bolt

- ❑ for 5th/6th gear shift fork

Identification of shift segments and 5th/6th gear shift fork with shift segments

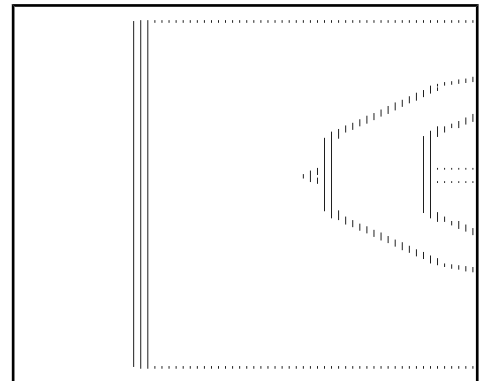
Dimension -a-

- 1 - Shift segments 1st/2nd gear = 10.2 mm
- 2 - 3rd/4th gear shift segment = 78.6 mm
- 3 - 5th/6th gear shift fork with shift segments = 79.5 mm



1st/2nd gear shift fork with shift segments

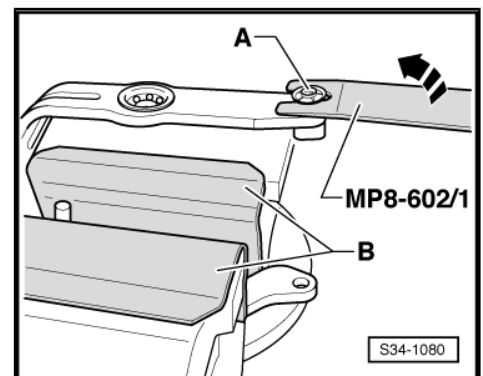
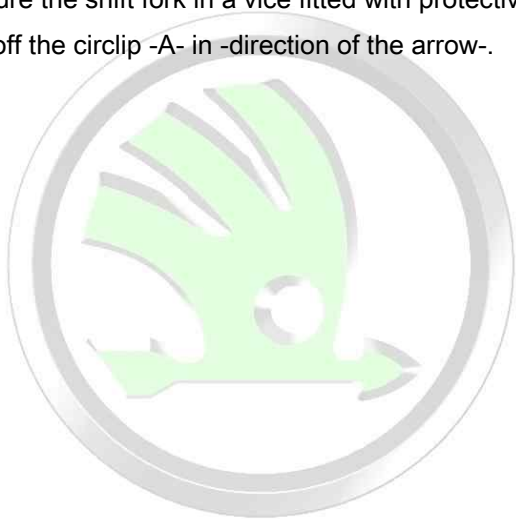
Dimension -a- = 75 mm



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Removing the circlip

- Secure the shift fork in a vice fitted with protective jaws -B-.
- Lift off the circlip -A- in -direction of the arrow-.





Fitting the circlip

- Press the circlip with a handle wrench into the slot of the shift segment.



Note

It must still be possible to rotate the shift segment freely once the circlip has been fitted.

A - Handle wrench, wrench size 10 mm

B - Protective jaws

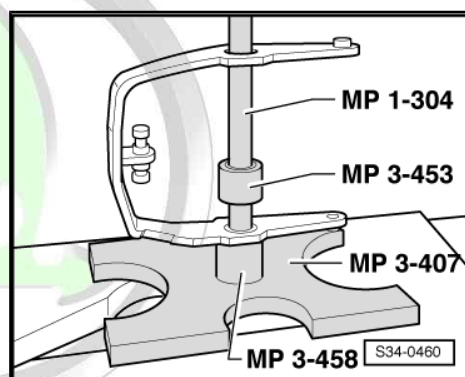


Removing the angular ball bearing



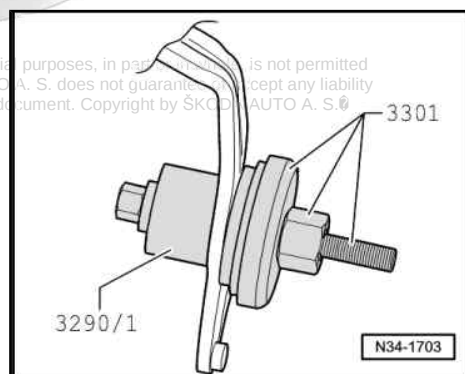
Note

Do not bend the shift forks when removing and installing the angular ball bearings.



Insert the angular ball bearing up to the stop into the gearshift fork

The recess in the pressure plate -3290/1- from the assembly device -3290- points towards the ball bearing.



35 – Wheels, shafts

1 Drive shaft

1.1 Disassembling and assembling the drive shaft

Special tools and workshop equipment required

- ◆ Bushing -MP1-316 (30-100)-
- ◆ Pressure plate -MP3-406 (VW 401)-
- ◆ Pressure plate -MP3-407 (VW 402)-
- ◆ Thrust piece -MP3-408 (VW 412)-
- ◆ Pipe section -MP3-414 (VW 516)-
- ◆ Thrust piece -MP3-423 (VW 407)-
- ◆ Thrust piece -MP3-431 (3002)-
- ◆ Pipe section -MP3-450 (VW 415A)-
- ◆ Pipe section -MP3-451 (VW 422)-
- ◆ Spacer sleeve -MP3-458/2 (VW 472/2)-
- ◆ Flywheel type belt pulley fitting tool -MP9-400-
- ◆ Cap -T10080-
- ◆ Thrust piece -T10081-
- ◆ Insert base -T10083-
- ◆ Pressure plate -T10084A-
- ◆ Cap -T30066 (30-23)-
- ◆ Separating device 12...75 mm , e.g. -Kukko 17/1-
- ◆ Extractor , e.g. -Kukko 18/1-
- ◆ Interior extractor 30...37 mm , e.g. -Kukko 21/5-
- ◆ Countersupport , e.g. -Kukko 22/1-



Note

- ◆ When installing new pinions observe the technical data [⇒ page 1](#) .
- ◆ Insert all bearings, sliding gears and synchronizer rings onto the drive shaft with gear oil.
- ◆ Do not interchange the synchronizer rings, if re-used always assign to the original sliding gear.



1 - Screw

- ☐ removing and installing
⇒ [page 73](#)

2 - Inner ring/cylindrical-roller bearing

- ☐ combined with thrust washer Pos. 3 on some gearboxes ⇒ [page 73](#)
- ☐ identify before removing
- ☐ do not interchange with inner ring/cylindrical-roller bearing of output shaft
- ☐ can be replaced separately
- ☐ removing and installing
⇒ [page 78](#)

3 - Thrust washer

- ☐ combined with inner ring/cylindrical-roller bearing Pos. 2 on some gearboxes ⇒ [page 73](#)

4 - 6th gear sliding gear

5 - 6th gear synchronizer ring

- ☐ check for wear
⇒ [page 104](#)

6 - Needle bearing

- ☐ for 6th gear
- ☐ replace together with Pos. 7
- ☐ on certain gearboxes two-piece, assign according to ⇒ Electronic Catalogue of Original Parts

7 - Bushing

- ☐ for 6th gear needle bearing
- ☐ replace together with Pos. 6
- ☐ removing and installing ⇒ [page 78](#)

8 - Sliding sleeve with 5th and 6th gear synchronizer body

- ☐ removing and installing ⇒ [page 78](#)
- ☐ disassembling ⇒ [page 106](#)
- ☐ Assembly of the sliding sleeve/5th/6th °gear synchronizer body ⇒ [page 106](#) and ⇒ [page 106](#)
- ☐ Fitting position ⇒ [page 106](#)

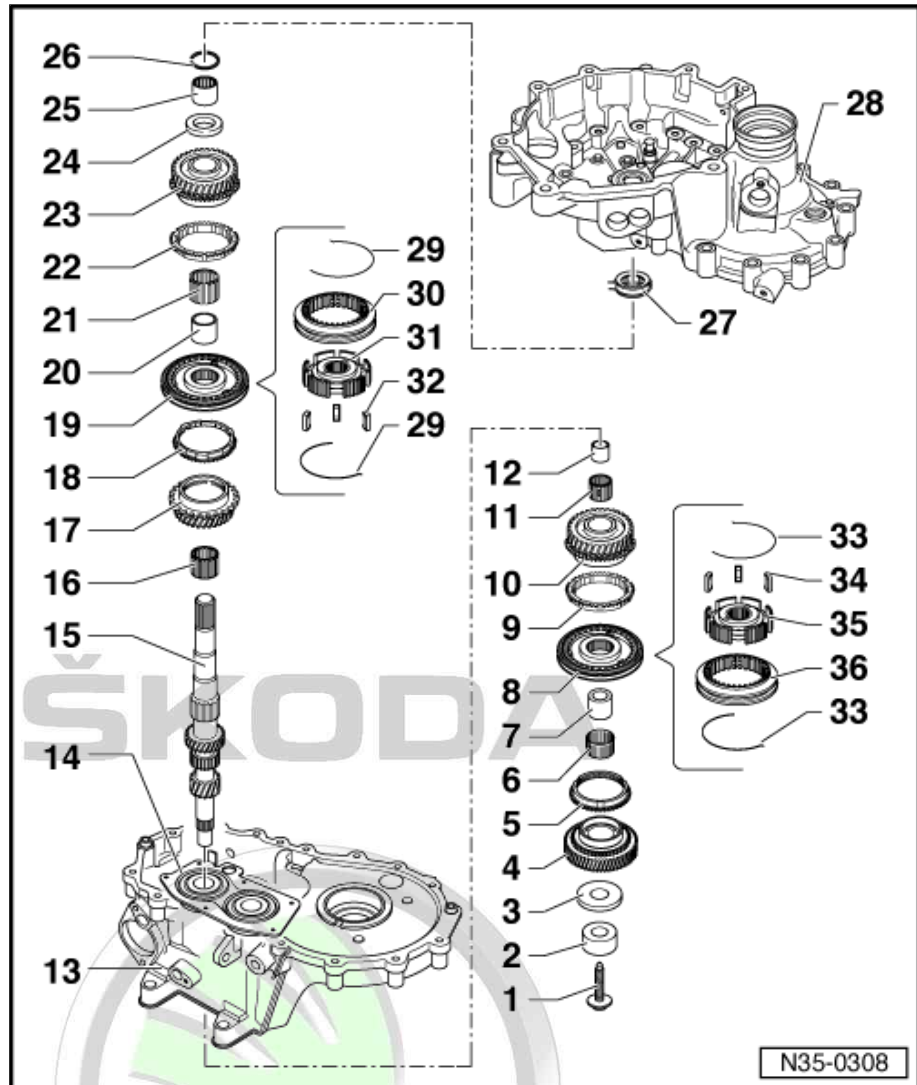
9 - 5th gear synchronizer ring

- ☐ is damaged by the drive shaft when removing
- ☐ always replace ⇒ Electronic Catalogue of Original Parts
- ☐ check for wear ⇒ [page 104](#)

10 - 5th gear sliding gear

11 - Needle bearing

- ☐ for 5th gear
- ☐ replace together with Pos. 12





12 - Bushing

- ☐ for 5th gear needle bearing
- ☐ replace together with Pos. 11
- ☐ press off with bearing support/grooved ball bearing Pos. 14
- ☐ pressing on ⇒ [page 105](#)

13 - Gearbox housing

- ☐ repairing ⇒ [page 88](#)

14 - Bearing support with grooved ball bearing

- ☐ Always replace grooved ball bearing together with the bearing support
- ☐ If the bearing support is released from the gearbox housing, it must always be replaced ⇒ Electronic Catalogue of Original Parts
- ☐ pressing off with 5th^o gear pinion ⇒ [page 102](#)
- ☐ pressing on ⇒ [page 105](#)

15 - Drive shaft

- ☐ Clean the threaded hole in the drive shaft e.g with a thread tap from the locking agent residues

16 - Needle bearing

- ☐ for 3rd gear

17 - 3rd gear sliding gear

18 - 3rd gear synchronizer ring

- ☐ check for wear ⇒ [page 104](#)

19 - Sliding sleeve with 3rd and 4th gear synchronizer body

- ☐ press off with 3rd gear sliding gear ⇒ [page 103](#)
- ☐ disassembling ⇒ [page 103](#)
- ☐ Fitting position sliding sleeve/synchronizer body ⇒ [page 103](#)
- ☐ assembling ⇒ [page 103](#)
- ☐ pressing on ⇒ [page 104](#)

20 - Bushing

- ☐ for 4th gear needle bearing
- ☐ replace together with Pos. 21
- ☐ press off with 3rd gear sliding gear ⇒ [page 103](#)
- ☐ pressing on ⇒ [page 104](#)

21 - Needle bearing

- ☐ for 4th gear
- ☐ replace together with Pos. 20

22 - 4th gear synchronizer ring

- ☐ check for wear ⇒ [page 104](#)

23 - 4th gear sliding gear

24 - Thrust washer

25 - Inner ring/cylindrical-roller bearing

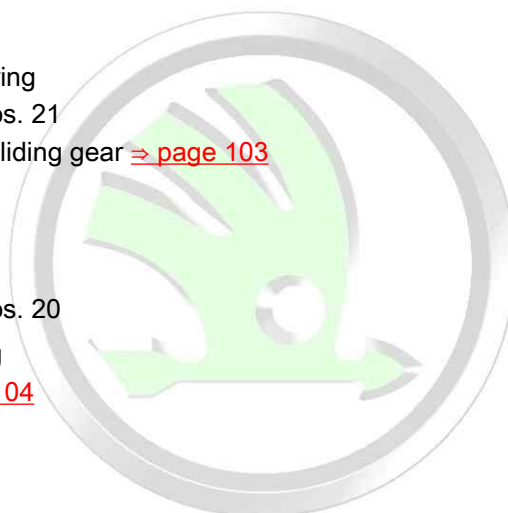
- ☐ pressing off ⇒ [page 103](#)
- ☐ pressing on ⇒ [page 104](#)

26 - Circlip

- ☐ replace ⇒ Electronic Catalogue of Original Parts
- ☐ Determine thickness ⇒ [page 105](#)

27 - Cylindrical-roller bearing

- ☐ with circlip
- ☐ removing ⇒ [page 102](#)



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- ❑ pressing on ➔ [page 102](#)
- ❑ Fitting position: the circlip in the bearing points towards the drive shaft

28 - Clutch housing

- ❑ repairing ➔ [page 88](#)

29 - Spring

- ❑ Fitting position ➔ [page 103](#)

30 - 3rd and 4th gear sliding sleeve

31 - Synchronizer body for 3rd and 4th gear

32 - Arresters (3 pieces)

33 - Spring

- ❑ Fitting position ➔ [page 106](#)

34 - Arresters (3 pieces)

35 - Synchronizer body for 5th and 6th gear

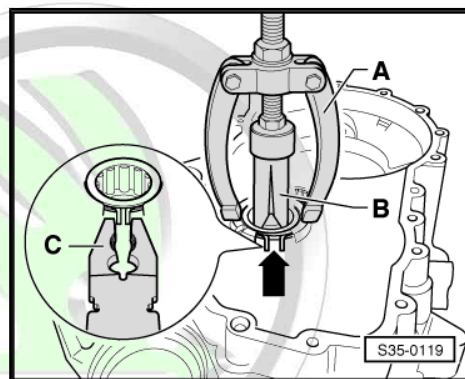
36 - Sliding sleeve for 5th and 6th gear

Pull out the cylindrical-roller bearing from the clutch housing

- When removing compress circlip -arrow- of the cylindrical-roller bearing with pliers -C-.

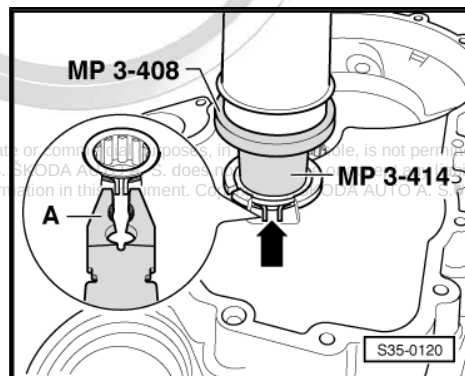
A - Countersupport , e.g. -Kukko 22/1-

B - Interior extractor 30...37 mm , e.g. -Kukko 21/5-



Press the cylindrical-roller bearing into the clutch housing

- Support the clutch housing with pipe section -MP3-450 (VW 415A)- , not visible in figure, directly under the bearing support.
- When inserting compress circlip -arrow- of the cylindrical-roller bearing with pliers -A-.
- Remove pliers before the cylindrical-roller bearing is in fitting position. The circlip must lock into the clutch housing slot.



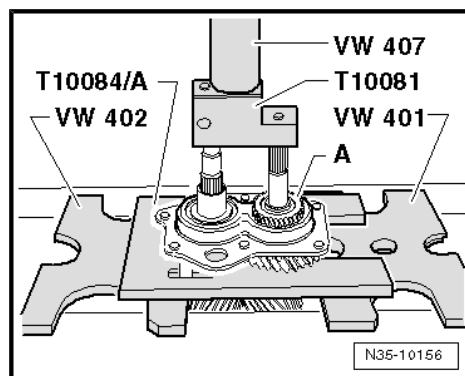
Press off the bearing support with the grooved ball bearing and the 5th gear° pinion -A-

- Sliding sleeve for 1st and 2nd gear to 2nd gear.
- Slide the pressure plate -T10084 A- sideways up to stop onto the drive shaft.



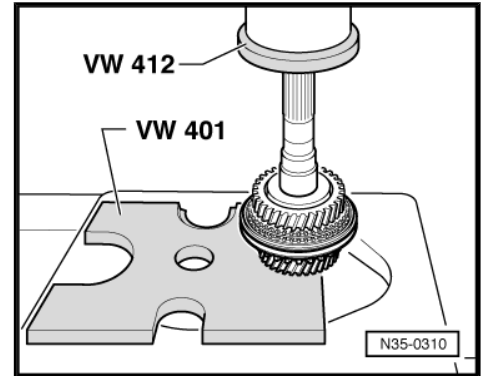
Note

Always replace bearing support with grooved ball bearing ➔
Electronic Catalogue of Original Parts .



Press off inner ring/cylindrical-roller bearing

- Remove circlip.
- Press off inner ring for cylindrical-roller bearing together with thrust washer, 4th ° gear sliding gear with needle bearing, sliding sleeve/synchronizer body for 3rd ° and 4th ° gear and 3rd ° gear sliding gear.

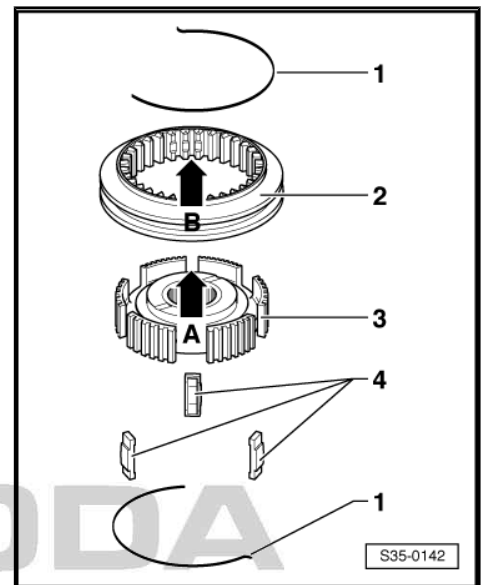


Disassembling and assembling the sliding sleeve and 3rd and 4th gear synchronizer body

- 1 - Spring
- 2 - Sliding sleeve
- 3 - Synchronizer body
- 4 - Arresters for synchronizer body

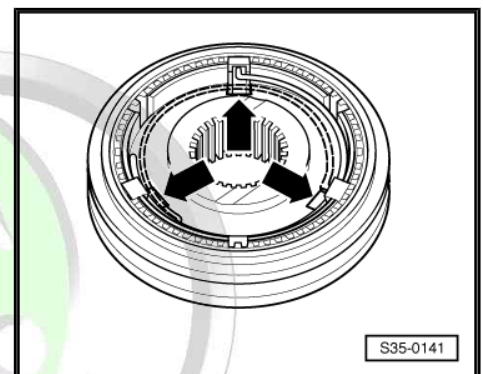
- Slide the sliding sleeve over the synchronizer body.

The deeper recesses -arrow A- of the arresters in the synchronizer body and the recesses -arrow B- in the sliding sleeve must be positioned above one another.



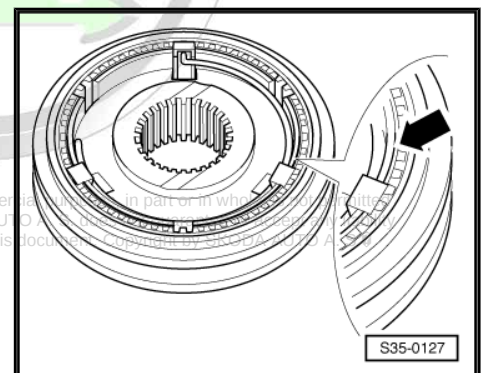
Assembly of the sliding sleeve/3rd and 4th gear synchronizer body

- The sliding sleeve is drawn over the synchronizer body.
 - Insert the arresters in the deeper recesses -arrows- and mount the springs with 120° offset.
- The angled end of the springs must grip into the hollow arrester of the synchronizer body.



Fitting position of the sliding sleeve/3rd and 4th gear synchronizer body

The groove on the front side -arrow- points towards the 4th gear.

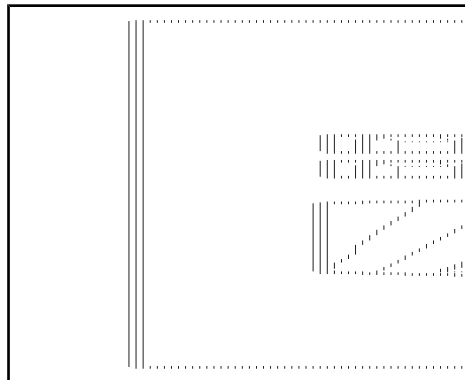


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Check synchronizer ring for wear

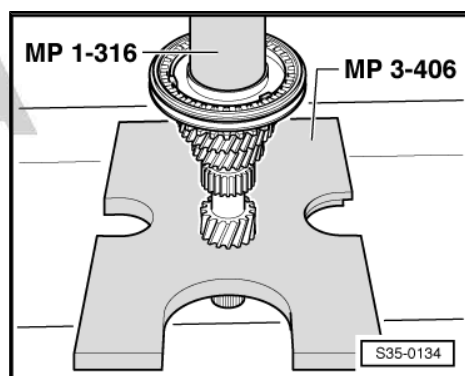
- Press the synchronizer ring on the cone of the sliding gear and measure clearance -a- with a feeler gauge.

Clearance -a-	Fitting dimension	Wear limit
3., 4., 5. and 6th gear	1.1...1.7 mm	0.5 mm



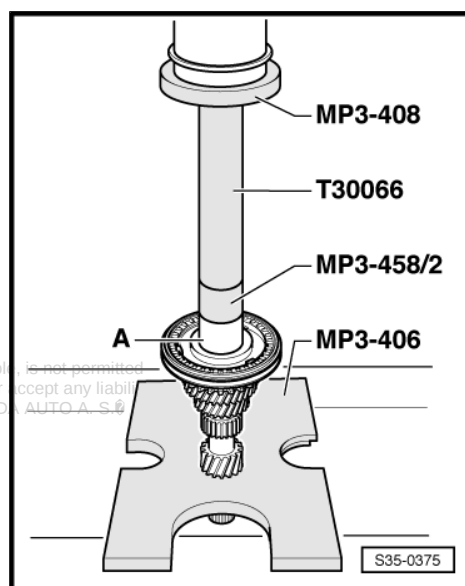
Press on the synchronizer body with the 3rd and 4th gear sliding sleeve

Fitting position: The wide collar points to the 3rd gear sliding gear.



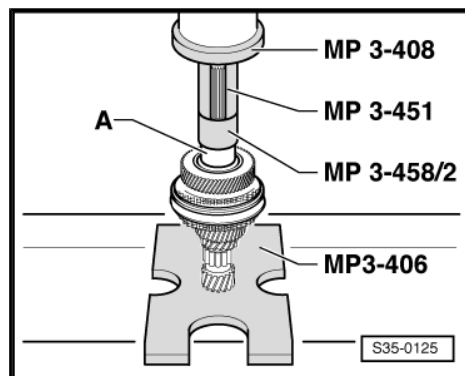
Press on the bushing -A- for the 4th gear needle bearing

- Subsequently place 4th gear needle bearing with 4th gear sliding gear and thrust washer.



Press on the inner ring -A- for the cylindrical-roller bearing

- Insert determined circlip ➔ [page 105](#).



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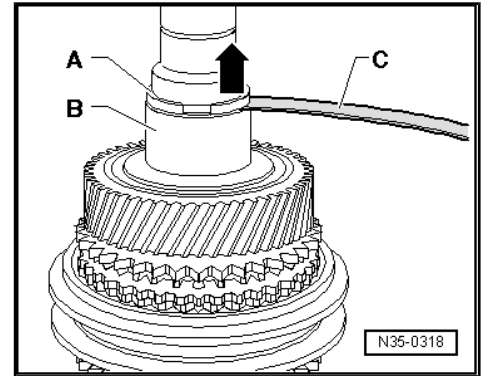
Determining the circlip

- Insert circlip -A- with a thickness of 2.0 mm in the slot of the drive shaft and push upwards -arrow-.
- Measure dimension between inner ring -B- and positioned circlip -A- using a feeler gauge -C-.
- Remove the circlip used to take the measurement.
- Determine the first circlip required according to the table.



Note

Assign circlips via ➔ *Electronic Catalogue of Original Parts*.



Circlips available

Measured value (mm)	Circlip thickness (mm)	Axial play (mm)
0,05...0,10	2,0	0,05...0,15
0,15...0,20	2,1	0,05...0,15
0,25...0,30	2,2	0,05...0,15
0,35...0,40	2,3	0,05...0,15
0,45...0,50	2,4	0,05...0,10

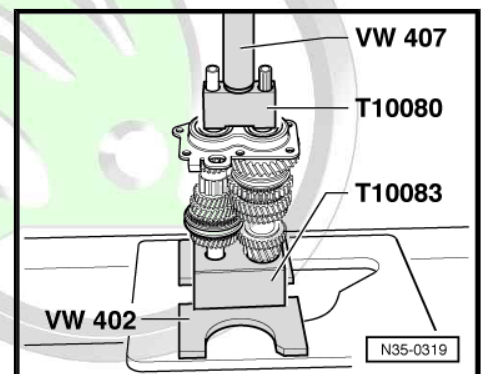
Press on bearing support with grooved ball bearing

- Before pressing on the bearing support heat it to max. 100 °C.



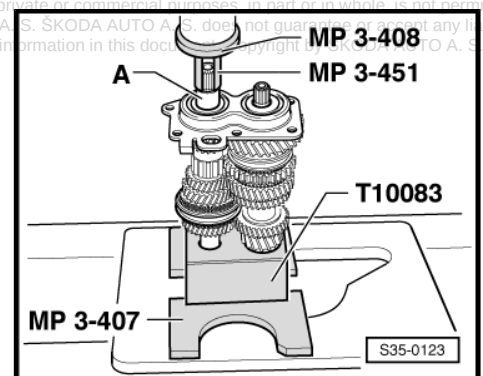
WARNING

Wear protective gloves!



Press on the bushing -A- for the 5th gear needle bearing

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Disassembling and assembling the sliding sleeve and 5th/6th gear synchronizer body

- 1 - Spring
- 2 - Sliding sleeve
- 3 - Synchronizer body

4 - Arrester

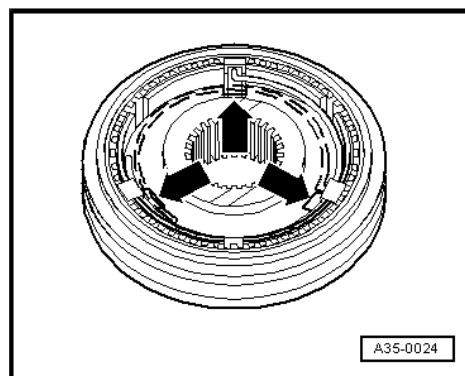
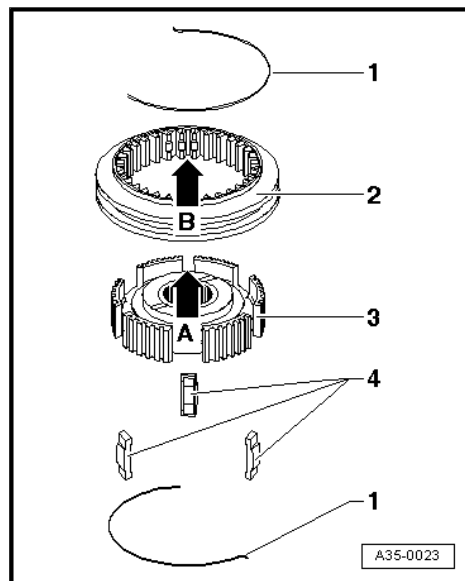
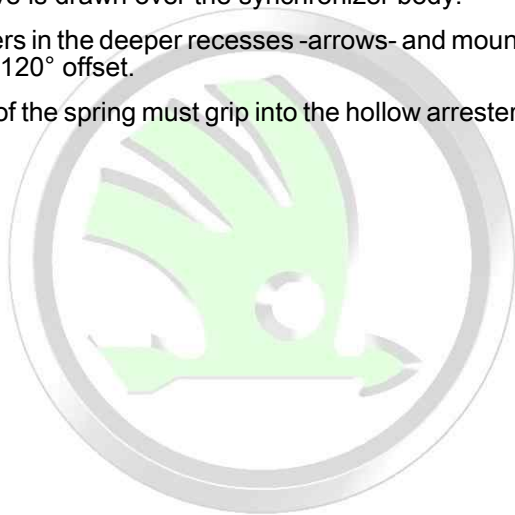
- Slide the sliding sleeve over the synchronizer body.

The deeper recesses -arrow A- of the arresters in the synchronizer body and the recesses -arrow B- in the sliding sleeve must be positioned above one another.

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Assembly of the sliding sleeve/5th/6th gear synchronizer body

- The sliding sleeve is drawn over the synchronizer body.
- Insert the arresters in the deeper recesses -arrows- and mount the springs with 120° offset.
- The angled end of the spring must grip into the hollow arrester.



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2 Output shaft

2.1 Disassembling and assembling the output shaft

Special tools and workshop equipment required

- ◆ Pressure plate -MP3-407 (VW 402)-
- ◆ Thrust piece -MP3-408 (VW 412)-
- ◆ Thrust piece -MP3-423 (VW 407)-
- ◆ Drive bushing -MP3-427 (40-21)-
- ◆ Pipe section -MP3-450 (VW 415A)-
- ◆ Thrust piece -MP3-4014 (VW 432)-
- ◆ Interior extractor 30...37 mm , e.g. -Kukko 21/5-
- ◆ Countersupport , e.g. -Kukko 22/1-



Note

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- ◆ *When installing new pinions or a new output shaft observe the technical data ⇒ [page 1](#) .*
- ◆ *Insert all bearings, sliding gears and synchronizer rings onto the output shaft with gear oil.*
- ◆ *Do not interchange the synchronizer rings, if re-used always assign to the original sliding gear.*



1 - Clutch housing

- ☐ repairing ➤ [page 88](#)

2 - Cylindrical-roller bearing

- ☐ with circlip
- ☐ removing ➤ [page 110](#)
- ☐ installing ➤ [page 110](#)
- ☐ Fitting position: the circlip in the bearing points towards the output shaft

3 - Output shaft

- ☐ if an inner ring is fitted as a bearing assembly for the cylindrical-roller bearing Pos. 2, it cannot be removed from the output shaft
- ☐ Inspect bearing assembly or inner ring for cylindrical-roller bearing for scoring and damage
- ☐ replace output shaft and cylindrical-roller bearing together if there is scoring and damage on the bearing assembly or inner ring

4 - 4th gear pinion

- ☐ Fitting position: Collar points to the 3rd °gear ➤ [page 111](#)

5 - Circlip

6 - Circlip

7 - 3rd gear pinion

- ☐ Fitting position: Collar points to the 4th °gear ➤ [page 111](#)

8 - Circlip

9 - 2nd gear sliding gear

10 - Needle bearing

- ☐ for 2nd gear

11 - Inner ring for 2nd gear

- ☐ check for wear ➤ [page 111](#)
- ☐ Fitting position ➤ [page 111](#)

12 - Outer ring for 2nd gear

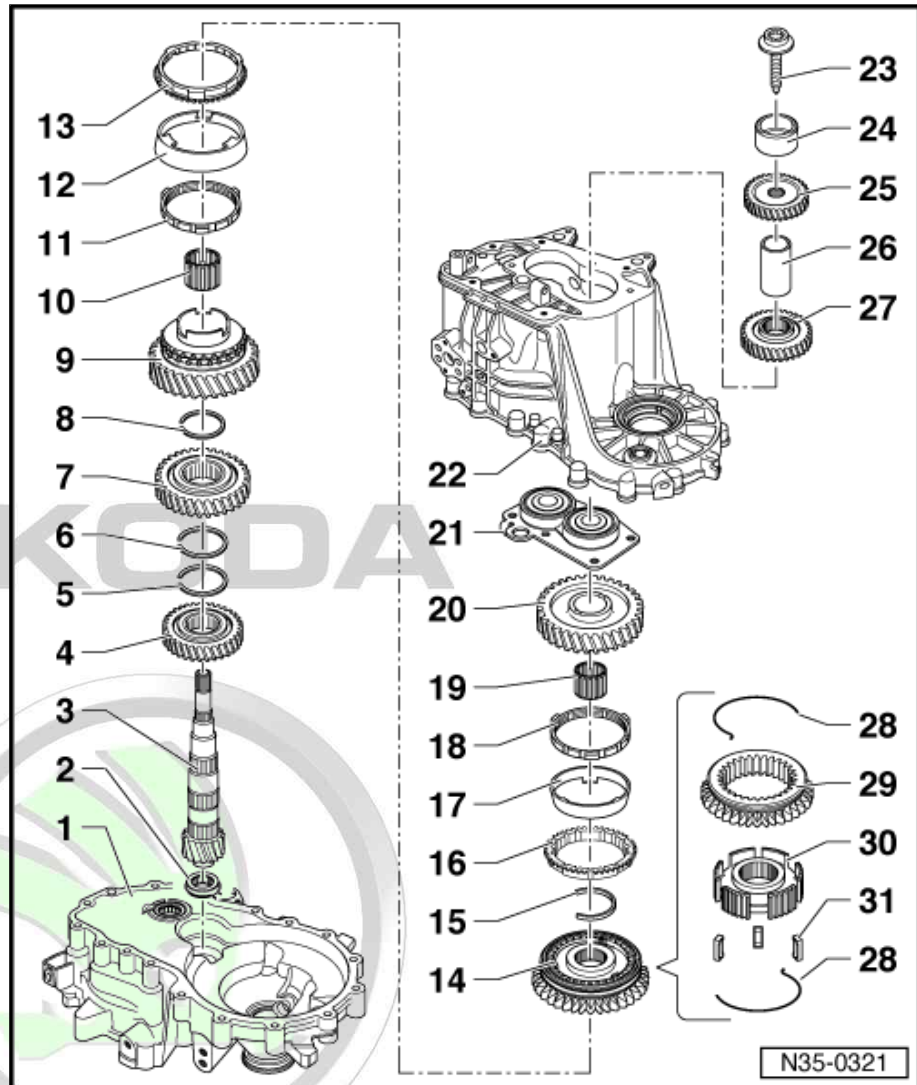
- ☐ place onto the inner ring Pos. 11
- ☐ replace if there are any traces of scoring or friction
- ☐ Fitting position ➤ [page 111](#)

13 - 2nd gear synchronizer ring

- ☐ check for wear ➤ [page 111](#)
- ☐ Fitting position ➤ [page 111](#)

14 - Sliding sleeve with 1st and 2nd gear synchronizer body

- ☐ after removing the circlip -Pos. 15- press off with the 2nd gear sliding gear ➤ [page 110](#)
- ☐ disassembling ➤ [page 112](#)
- ☐ Assembling sliding sleeve/synchronizer body ➤ [page 112](#) and ➤ [page 112](#)





☐ Fitting position ➤ [page 112](#)

☐ pressing on ➤ [page 112](#)

15 - Circlip

☐ pushing out ➤ [page 110](#)

☐ inserting ➤ [page 113](#)

16 - 1st gear synchronizer ring

☐ check for wear ➤ [page 111](#)

☐ insert in such a way that the recesses lock into the arresters on the sliding sleeve Pos. 14

17 - Outer ring for 1st gear

☐ insert into synchronizer ring Pos. 16

☐ Fitting position ➤ [page 113](#)

☐ replace if there are any traces of scoring or friction

18 - Inner ring for 1st gear

☐ check for wear ➤ [page 111](#)

☐ Check pegs for traces of wear

☐ Fitting position ➤ [page 113](#)

19 - Needle bearing

☐ for 1st gear

20 - 1st gear sliding gear

☐ Fitting position ➤ [page 113](#)

21 - Bearing support with grooved ball bearing

☐ Always replace grooved ball bearing together with the bearing support

☐ If the bearing support is released from the gearbox housing, it must always be replaced ➤ Electronic Catalogue of Original Parts

☐ removing and installing ➤ [page 99](#)

22 - Gearbox housing

☐ repairing ➤ [page 88](#)

23 - Screw

☐ removing and installing ➤ [page 73](#)

24 - Inner ring/cylindrical-roller bearing

☐ identify before removing

☐ do not interchange with inner ring/cylindrical-roller bearing of input shaft

☐ can be replaced separately

☐ removing and installing ➤ [page 78](#)

25 - 6th gear pinion

☐ Fitting position: Collar points to the bushing Pos. 26

☐ removing and installing ➤ [page 78](#)

26 - Bushing

☐ removing and installing ➤ [page 78](#)

27 - 5th gear pinion

☐ Fitting position ➤ [page 78](#)

☐ press off together with bearing support Pos. 21 ➤ [page 99](#)

☐ pressing on ➤ [page 78](#)

28 - Spring

☐ Fitting position ➤ [page 112](#)

29 - Sliding sleeve

30 - Synchronizer body

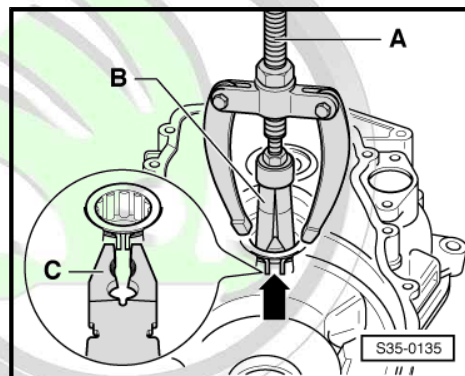
31 - Arresters (3 pieces)

Pull out the cylindrical-roller bearing from the clutch housing

- When removing compress circlip of the cylindrical-roller bearing -arrow- with pliers -C-.

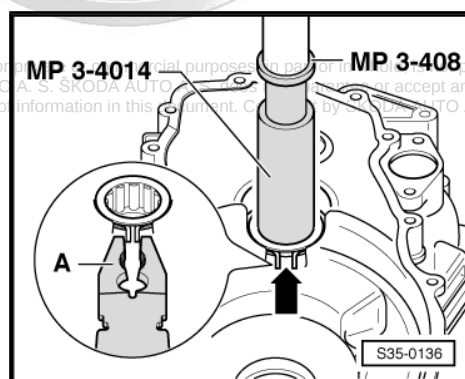
A - Countersupport , e.g. -Kukko 22/1-

B - Interior extractor 30...37 mm , e.g. -Kukko 21/5-



Press the cylindrical-roller bearing into the clutch housing

- Support the clutch housing with pipe section -MP3-450-, not visible in figure, directly under the bearing support.
- When pressing in the cylindrical-roller bearing compress the circlip -arrow- with pliers -A-.
- Remove pliers before the cylindrical-roller bearing is in fitting position. The circlip must lock into the clutch housing slot.



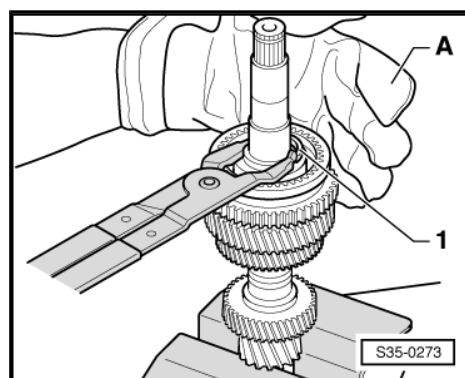
Press the circlip -1- out of the slot

A - Protective glove



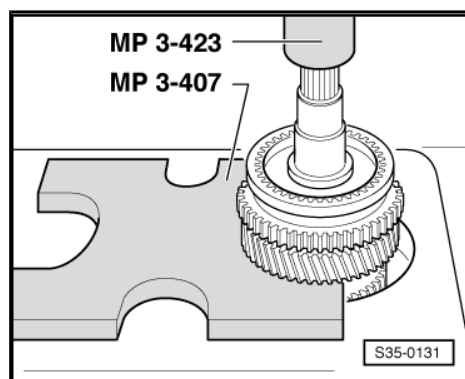
WARNING

Prevent uncontrolled ejection of the circlip.



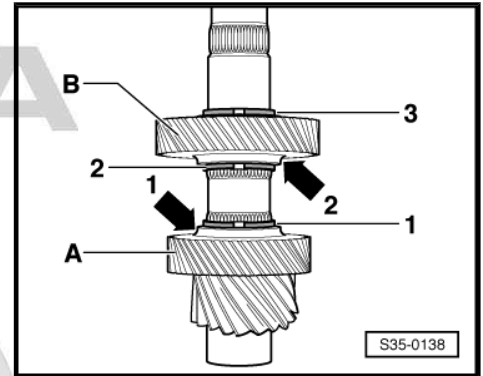
Press off sliding sleeve with 1st and 2nd gear synchronizer body

- After removing the circlip jointly press off the 2nd gear sliding gear and the sliding sleeve/synchronizer body.



Fitting position of gear pinion of 3rd and gear pinion of 4th

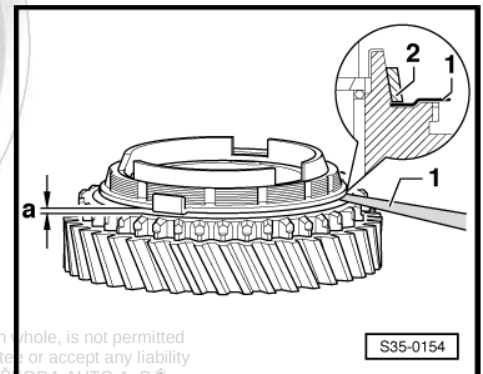
- Place the 4th gear pinion -A- on the output shaft.
- Fitting position:
The collar -arrow 1- points towards the 3rd gear pinion -B-.
- Insert circlips -1- and -2-.
- Place the 3rd gear pinion -B- on the output shaft.
- Fitting position:
The collar -arrow 2- points towards the 4th gear pinion -A-.
- Insert circlip -3-.



Check 1st and 2nd gear inner ring for wear

- Press the inner ring -2- on the cone of the sliding gear and measure clearance -a- with a feeler gauge -1-.

	Fitting dimension	Wear limit
Clearance -a-	0.75...1.25 mm	0.3 mm

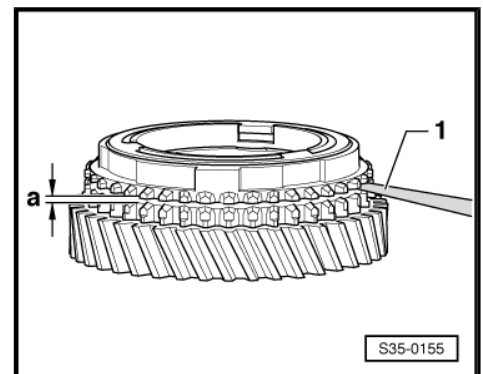


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Check 1st and 2nd gear synchronizer ring for wear

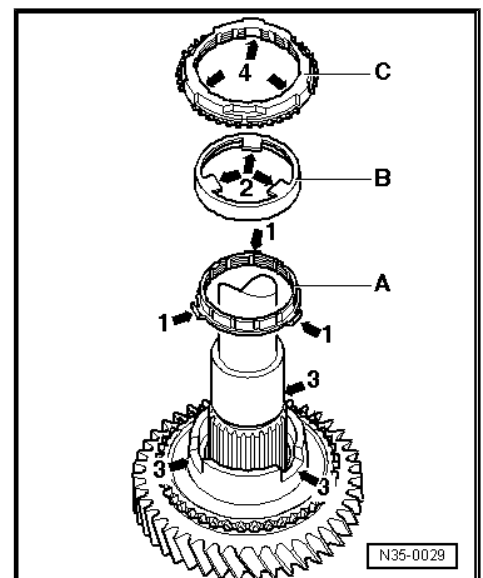
- Press the synchronizer ring, outer ring and inner ring on the cone of the sliding gear and measure clearance -a- with a feeler gauge -1-.

	Fitting dimension	Wear limit
Clearance -a-	1.2...1.8 mm	0.5 mm



Fitting position of the outer ring, inner ring and 2nd gear synchronizer ring

- Position the inner ring -A- on the 2nd gear sliding gear.
- The angled lands -arrow 1- point towards the outer ring -B-.
- Position the outer ring -B-.
- Lock the lands -arrows 2- in the recesses -arrows 3- of the sliding gear.
- Insert the synchronizer ring -C-.
- Lock the recesses -arrows 4- in the lands -arrows 1- of the inner ring -A-.



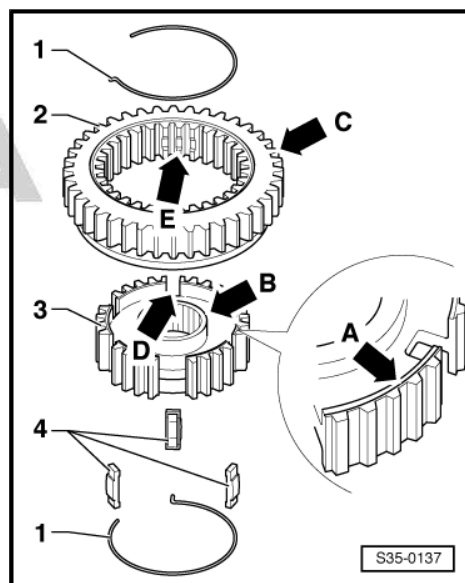
Disassembling and assembling the sliding sleeve and 1st and 2nd gear synchronizer body

- 1 - Spring
- 2 - Sliding sleeve
- 3 - Synchronizer body
- 4 - Arresters for synchronizer body

– Slide the sliding sleeve over the synchronizer body.

Fitting position:

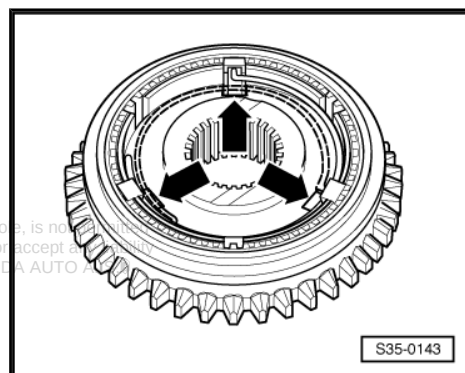
After assembly the groove on the front side -arrow A- and the higher collar -arrow B- of the synchronizer body point towards the outer serration of the sliding sleeve -arrow C-. The deeper recesses -arrow D- of the arresters in the synchronizer body and the recesses -arrow E- in the sliding sleeve must be positioned above one another.



Assembly of the sliding sleeve/1st and 2nd gear synchronizer body

- The sliding sleeve is drawn over the synchronizer body.
- Insert the arresters in the deeper recesses -arrows- and mount the springs with 120° offset. The angled end of the spring must grip into the hollow arrester.

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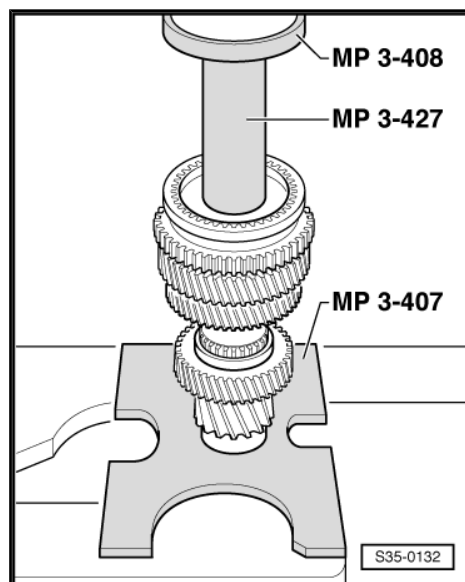


Press on the sliding sleeve and 1st and 2nd gear synchronizer body

Fitting position:

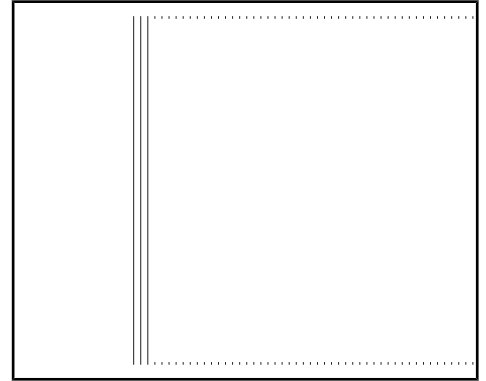
The slot for the shift fork in the sliding sleeve points towards the 1st gear, the serration of the reversing gear points towards the 2nd gear.

- Rotate the synchronizer ring in such a way that the slots are flush with the arresters.



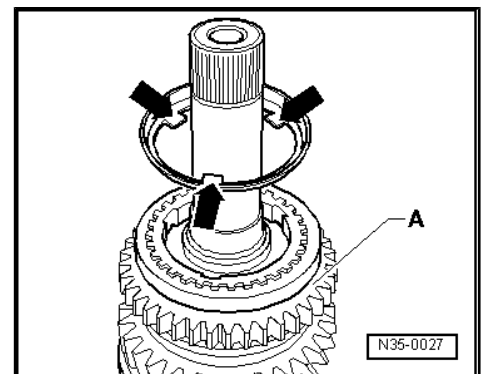
Insert the circlip

- Insert the 1st gear synchronizer ring in the sliding sleeve/synchronizer body.



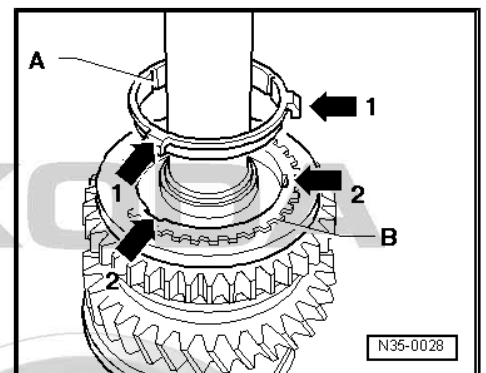
Fitting position of the 1st gear outer ring

The pegs -arrows- point towards the reversing gear serration.



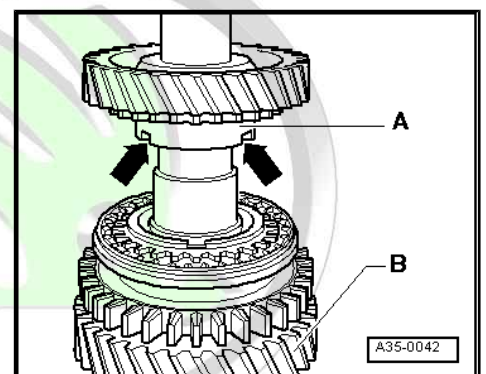
Fitting position for 1st gear inner ring -A-

Lock the pegs -arrows 1- in the recesses -arrows 2- of the synchronizer ring -B-.



Fitting position 1st gear sliding gear

The higher collar -A- points towards the 2nd gear -B-. The recesses in the collar -arrows- lock into the pegs of the outer ring
 ⇒ [page 113](#).



39 – Final drive, differential gear

1 Replacing the flange shaft gasket rings (gearbox assembled)

Replacing the left flange shaft gasket ring ⇒ [page 114](#) .

Replacing the right flange shaft gasket ring ⇒ [page 115](#) .

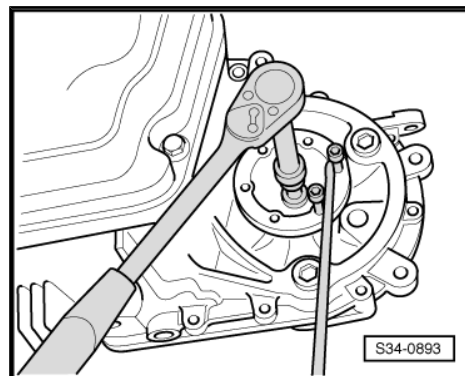
1.1 Replacing the left flange shaft gasket ring

Special tools and workshop equipment required

- ◆ Extractor -MP3-419/37 (VW 771/37)-
- ◆ Inertia extractor -MP9-501 (VW 771)-
- ◆ Thrust piece -T10160-
- ◆ Catch pan
- ◆ Sealing grease -G 052 128 A1-

Remove left gasket ring.

- Remove front left wheel and raise vehicle.
- Remove the noise insulation below the engine/gearbox ⇒ Body Work ⇒ Rep. Gr. 50 .
- Remove the front left wheelhouse liner ⇒ Body Work ⇒ Rep. Gr. 66 .
- Turn steering to full left lock.
- Unscrew the drive shaft from the flange shaft.
- Tie up the drive shaft as far as possible. Avoid damaging the paintwork on the drive shaft during this operation.
- Position the catch pan under the gearbox.
- Unscrew the fixing screw for the flange shaft; to do this, insert two screws in the flange and hold the shaft using a tyre iron.
- Remove the flange shaft with pressure spring.

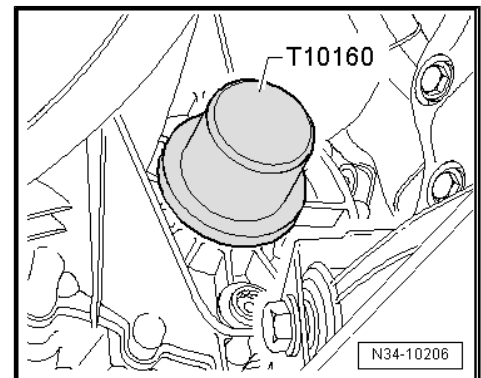
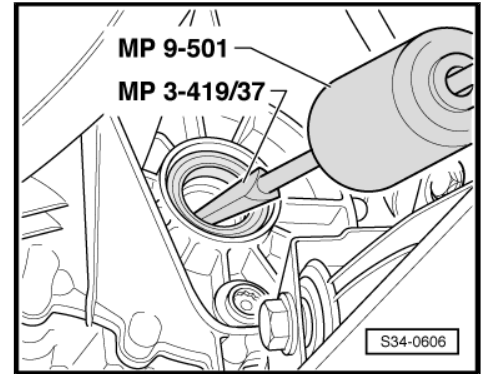


- Remove gasket ring for flange shaft with inertia extractor - MP9-501 (VW 771)- and extractor - MP3-419/37 (VW 771/37)- .

Install left gasket ring.

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- Drive the new seal ring in up to the stop, do not twist the seal ring.
- Fill half the space between the sealing lip and dust lip with sealing grease -G 052 128 A1- .
- Insert the flange shaft.
- Secure the flange shaft with the conical screw.
- Screw the left drive shaft to flange shaft ⇒ chassis ⇒ Rep. Gr. 40 .
- Install the wheelhouse liner into the left wheelhouse ⇒ Body Work ⇒ Rep. Gr. 66 .
- Install wheel ⇒ Chassis ⇒ Rep. Gr. 44 .
- Check gear oil level, if necessary fill up to lower edge of filler hole ⇒ [page 71](#) .
- Install the noise insulation below the engine/gearbox ⇒ Body Work ⇒ Rep. Gr. 50 .



Tightening torques Reproduction for private or commercial purposes, in part or in whole, is not permitted without the written consent of ŠKODA AUTO A. S. ŠKODA AUTO A. S. does not guarantee or accept any liability for the correctness of information in this document. Copyright by ŠKODA AUTO A. S.

Component	Nm
Flange shaft on gearbox (conical screw)	⇒ page 117

1.2 Replacing the right flange shaft seal ring

Special tools and workshop equipment required

- ◆ Extractor -MP3-419/37 (VW 771/37)-
- ◆ Inertia extractor -MP9-501 (VW 771)-
- ◆ Thrust piece -T10160-
- ◆ Catch pan
- ◆ Sealing grease -G 052 128 A1-

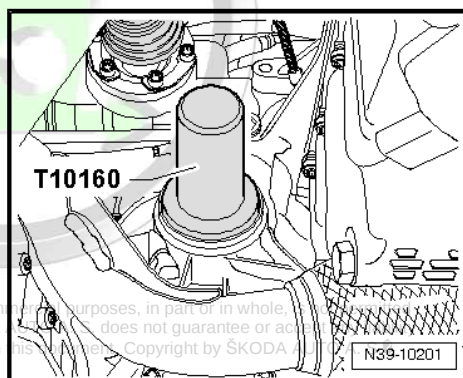
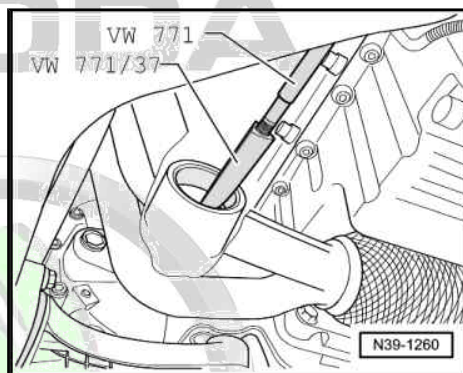
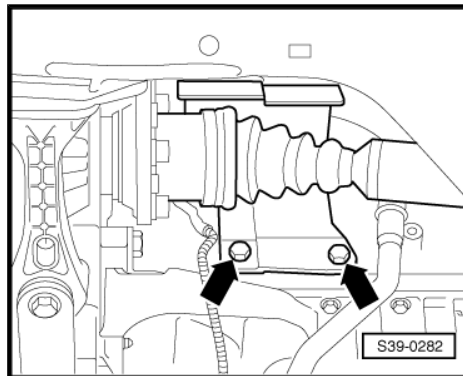
Remove right gasket ring.

- Remove the noise insulation below the engine/gearbox ⇒ Body Work ⇒ Rep. Gr. 50 .
- Turn steering to full right lock.

- Remove screen cap for drive shaft (if present) from the engine -arrows-.
- Unscrew the drive shaft from the flange shaft.
- Tie up the drive shaft as far as possible. Avoid damaging the paintwork on the drive shaft during this operation.
- Position the catch pan under the gearbox.
- Unscrew the fixing screw for the flange shaft; to do this, insert two screws in the flange and hold the shaft using a tyre iron.
- Remove the flange shaft with pressure spring.
- Pull out seal ring for flange shaft with -VW 771 (MP9-501)- and -VW 771/37 (MP3-419/37)- .

Install right gasket ring.

- Drive the new seal ring in up to the stop, do not twist the seal ring.
- Fill half the space between the sealing lip and dust lip with sealing grease -G 052 128 A1- .
- Insert the flange shaft.
- Secure the flange shaft with the conical screw.
- Screw the right drive shaft onto the flange shaft ⇒ chassis ⇒ Rep. Gr. 40 .
- Check gear oil level, if necessary fill up to lower edge of filler hole ⇒ [page 71](#) .
- Install the noise insulation below the engine/gearbox ⇒ Body Work ⇒ Rep. Gr. 50 .



Tightening torques

Component	Nm
Flange shaft on gearbox (conical screw)	⇒ page 117
Screen cap of drive shaft to engine	⇒ Chassis ⇒ Rep. Gr. 40

2 Differential gear

2.1 Disassembling and assembling differential gear

Special tools and workshop equipment required

- ◆ Counterholder -MP1-223 (3067)-
- ◆ Pressure plate -MP3-406 (VW 401)-
- ◆ Pressure plate -MP3-407 (VW 402)-
- ◆ Thrust piece -MP3-408 (VW 412)-
- ◆ Pipe section -MP3-409 (VW 418A)-
- ◆ Press-on sleeve -MP3-412 (VW 455)-
- ◆ Drive bushing -MP3-427 (40-21)-
- ◆ Thrust piece -MP3-431 (3002)-
- ◆ Thrust piece -MP3-448 (VW 408 A)-
- ◆ Spacer sleeve -MP3-458/2 (VW 472/2)-
- ◆ Thrust plate -MP3-464 (30 - 205)-
- ◆ Pressure pipe -MP6-408 (30-14)-
- ◆ Pipe -MP6-419 (3259)-
- ◆ Pipe section -T30041 (2040)-
- ◆ Tapered-roller bearing extractor -V.A.G 1582-
- ◆ Gripper -V.A.G 1582/3-
- ◆ Interior extractor 46...58 mm , e.g. -Kukko 21/7-
- ◆ Countersupport , e.g. -Kukko 22/2-



Note

- ◆ *Before installing heat the inner ring of the tapered-roller bearing to 100°C.*
- ◆ *Replace both tapered-roller bearings together.*
- ◆ *When replacing the tapered-roller bearings, the differential housing, the gearbox housing or the clutch housing, set the differential gear ⇒ [page 121](#) .*

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1 - Conical screw, 25 Nm

- ☐ screw into threaded piece Pos. 8

2 - Right flange shaft

3 - Pressure spring for flange shaft

- ☐ fitted behind flange shaft

4 - Thrust washer

- ☐ Fitting position: Collar towards pressure spring

5 - Conical ring

- ☐ Fitting position: Cone towards differential gear housing

6 - Circlip

- ☐ holds the conical ring, stop disc and pressure spring in position when the flange shaft is removed

7 - large differential bevel gear

- ☐ installing ⇒ [page 121](#)

8 - Threaded part

- ☐ installing ⇒ [page 121](#)

9 - Differential bevel gear shaft

- ☐ to remove cut tensioning sleeve Pos. 17 ⇒ [page 120](#)
- ☐ installing ⇒ [page 121](#)

10 - small differential bevel gear

- ☐ installing ⇒ [page 121](#)

11 - Stop disc compound

- ☐ insert with gear oil

12 - Flange shaft left

13 - Gasket ring

- ☐ for left flange shaft
- ☐ replace with installed gearbox ⇒ [page 114](#)

14 - Outer ring/tapered-roller bearing

- ☐ removing ⇒ [page 119](#)
- ☐ installing ⇒ [page 119](#)

15 - Inner ring/tapered-roller bearing

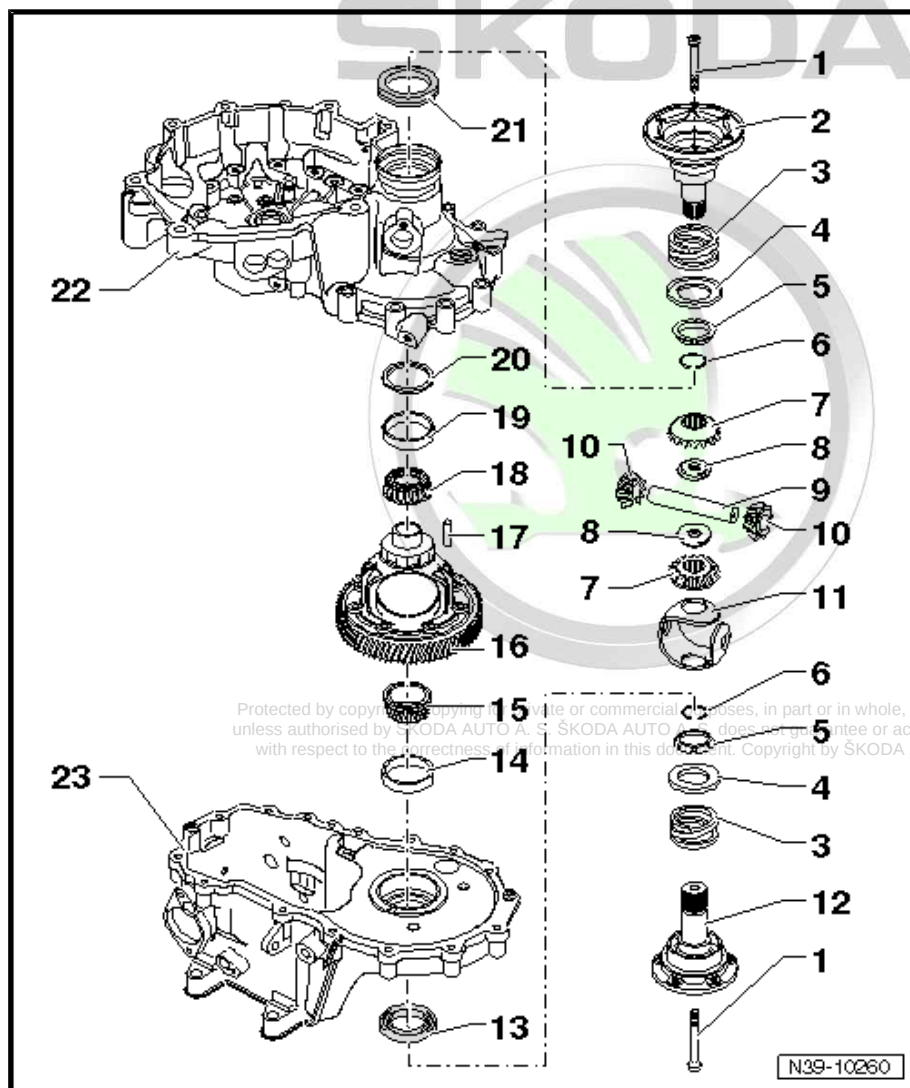
- ☐ remove ⇒ [page 119](#)
- ☐ pressing on ⇒ [page 120](#)

16 - Differential gear housing

- ☐ with gear pinion for final drive

17 - Tensioning sleeve

- ☐ to secure the differential bevel gear shaft
- ☐ is cut when removing ⇒ [page 120](#)



- ☐ installing ⇒ [page 121](#)

18 - Inner ring/tapered-roller bearing

- ☐ remove ⇒ [page 119](#)
- ☐ pressing on ⇒ [page 120](#)

19 - Outer ring/tapered-roller bearing

- ☐ pressing out ⇒ [page 120](#)
- ☐ pressing on ⇒ [page 120](#)

20 - Adjusting washer

- ☐ for the differential gear
- ☐ Determine thickness ⇒ [page 121](#)

21 - Gasket ring

- ☐ for right flange shaft
- ☐ replace with installed gearbox ⇒ [page 115](#)

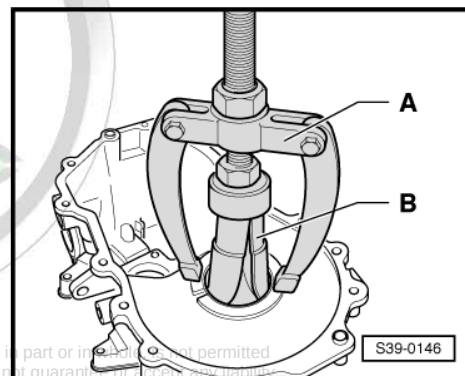
22 - Clutch housing

23 - Gearbox housing

Remove outer ring/tapered-roller bearing from gearbox housing

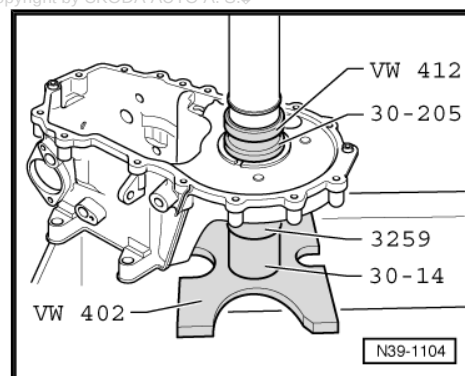
A - Countersupport , e.g. -Kukko 22/2-

B - Interior extractor 46...58 mm , e.g. -Kukko 21/7-



Press in outer ring/tapered-roller bearing in the gearbox housing

- Support the gearbox housing with a pipe -3259 (MP6-419)- directly below the bearing support.



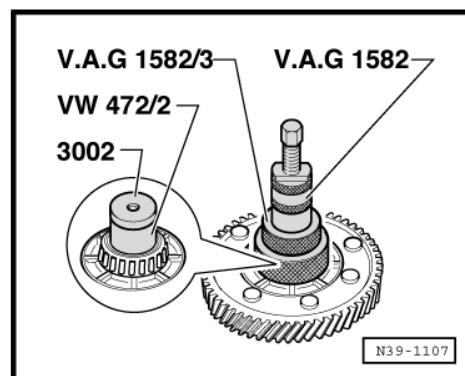
Remove inner rings/tapered-roller bearing

- Before fitting the extractor, position the spacer sleeve -VW 472/2 (MP3-458/2)- and the thrust piece -3002 (MP3-431)- on the differential gear housing.



Note

- ◆ Both inner rings/tapered-roller bearings of the differential gear housing are removed in the same way.
- ◆ The inner and outer rings of the tapered-roller bearing are paired. Do not interchange!



Press on inner rings/tapered-roller bearing

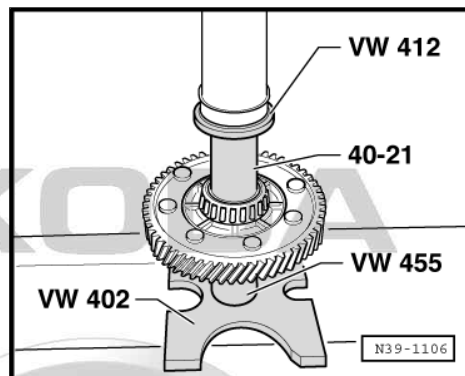
- Press on inner ring/tapered-roller bearing with drive bushing -40-21 (MP3-427)- up to the stop.
- Support the opposite side of the inner ring with an insertion bushing -VW 455 (MP3-412)- .

The shoulder of the insertion bushing -VW 455- points to the differential gear housing.



Note

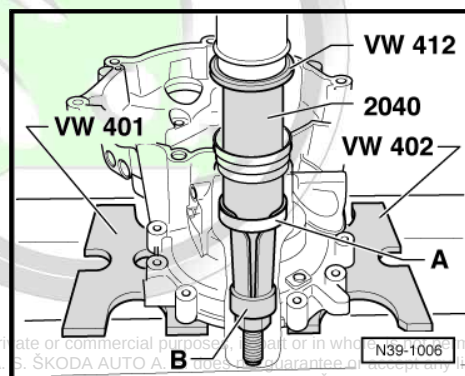
- ♦ Both inner rings/tapered-roller bearings of the differential gear housing are pressed on in the same way.
- ♦ The inner and outer rings of the tapered-roller bearing are paired. Do not interchange!



Press the outer ring/tapered-roller bearing -A- out off the clutch housing

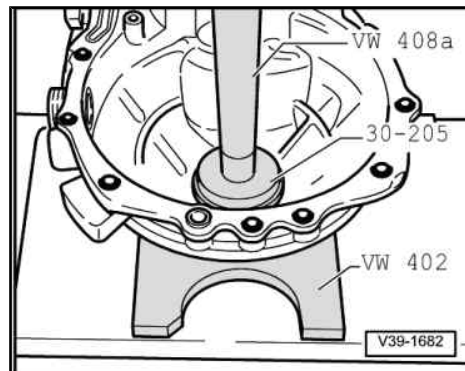
B - Interior extractor 46...58 mm , e.g. -Kukko 21/7-

- Position pipe -2040 (T30041)- directly on the feet of the interior extractor -B- and press out the outer ring/tapered-roller bearing -A-.



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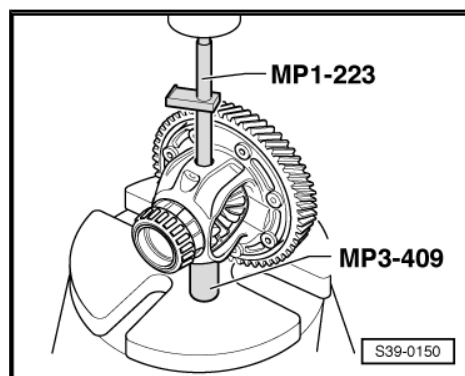
Press outer ring/tapered-roller bearing into the clutch housing



Press out differential bevel gear shaft

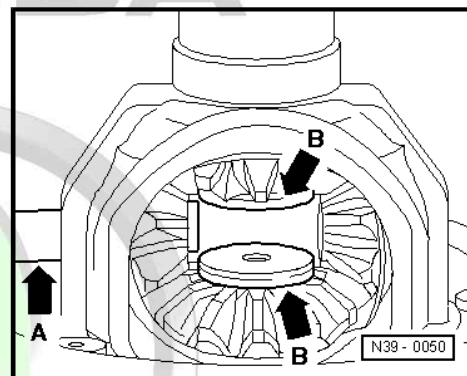
The tensioning sleeve is cut during pressing out.

- Remove the remaining part of the tensioning sleeve from the differential gear housing.



Install differential bevel gears

- Install stop disc compound with gearbox oil.
- Insert both large differential bevel gears and secure (e.g. with flange shaft).
- Insert and swivel the small differential bevel gears into position with a 180° offset.
- Push in the differential bevel gear shaft -arrow A- up to the first small differential bevel gear.
- Insert the threaded parts -arrows B- in the large differential bevel gears.



Fitting position: Heel of the differential bevel gear.

- Drive in the differential bevel gear shaft up to end position and secure with new tensioning sleeve.

2.2 Adjusting the differential gear

Special tools and workshop equipment required

- ◆ Gauge block plate - MP3-405/17 (VW 385/17)-
- ◆ Pressure plate -MP3-406 (VW 401)-
- ◆ Pressure plate -MP3-407 (VW 402)-
- ◆ Thrust piece -MP3-408 (VW 412)-
- ◆ Universal dial gauge holder -MP3-447 (VW 387)-
- ◆ Thrust piece -MP3-448 (VW 408 A)-
- ◆ Thrust plate -MP3-464 (30-205)-
- ◆ Pressure pipe -MP6-408 (30-14)-
- ◆ Pipe -MP6-419 (3259)-
- ◆ Pipe section -T30041 (2040)-
- ◆ Interior extractor 46...58 mm , e.g. -Kukko 21/7-

The differential gear must be re-set when the following components are replaced:

- ◆ Gearbox housing
- ◆ Clutch housing
- ◆ Differential gear housing

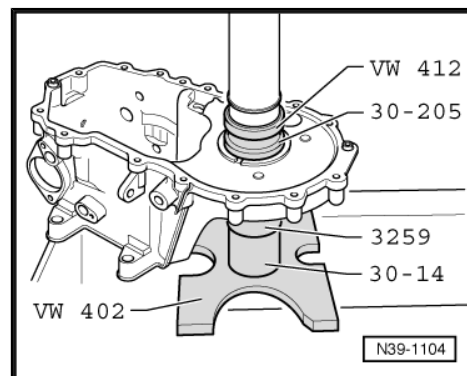
or the

- ◆ Tapered-roller bearings of the differential gear
- Press in outer ring/tapered-roller bearing (pinion side) in the gearbox housing.
- Support the gearbox housing with a pipe -3259 (MP6-419)- directly below the bearing support.

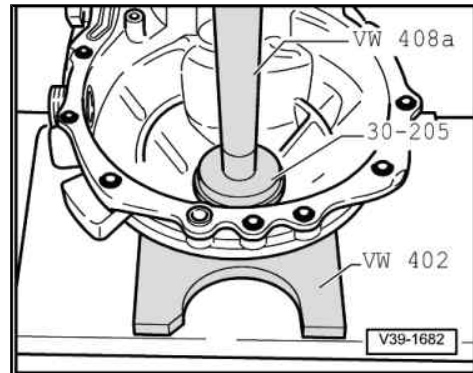


Note

The inner and outer rings of the tapered-roller bearing are paired. Do not interchange!



- Press the outer ring/tapered-roller bearing (opposite pinion side) without adjusting washer into the clutch housing.
- Insert the differential gear in the gearbox housing.
- Position the clutch housing and tighten 5 screws to the given tightening torque ➔ [page 75](#).

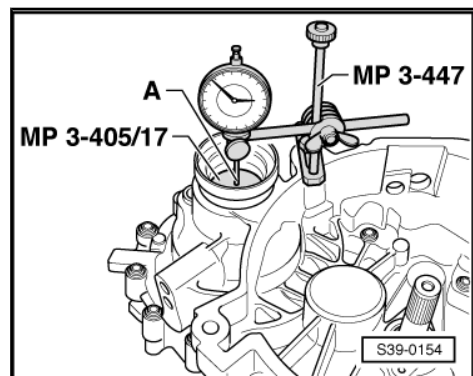


- Set up the measuring device and dial gauge (3 mm measuring range), dial gauge extension -A- approx. 30 mm).
- Set the dial gauge to 0 with 1 mm bias.
- Move the differential gear up and down, read off and write down the clearance on the dial gauge. (Example: 1.50 mm)



Note

Do not turn the differential gear while measuring as otherwise the bearings will settle and the measuring result will be inaccurate.



2.2.1 Determine thickness of the adjusting washer

The prescribed bearing preload is reached by adding to the established measured value (example: 1.50 mm) a constant compression value (0.25 mm).

Example

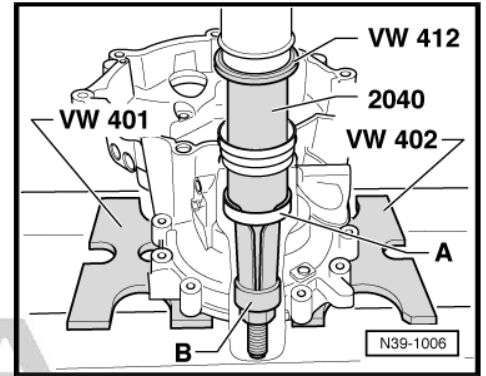
measured value	1.50 mm
+ pressure (const. value)	0.25 mm
Thickness of the adjusting washer	= 1.75 mm



- Remove the clutch housing and press out the outer ring/tapered-roller bearing -A-.
- B- Interior extractor 46 ... 58 mm , e.g. -Kukko 21/7-
- Position pipe -2040 (T30041)- directly on the feet of the interior extractor -B- and press out the outer ring/tapered-roller bearing -A-.

 Note

Assign the adjusting washer (s) via the ⇒ Electronic Catalogue of Original Parts .



Available adjusting washers

Adjusting washer thickness (mm)		
0,65	0,90	1,15
0,70	0,95	1,20
0,75	1,00	1,25
0,80	1,05	
0,85	1,10	

Different tolerances allow to select the required thickness for each washer very precisely.

If the measured washer thickness is greater than the one listed in the table, 2 washers corresponding to the measured value may be fitted.

- Insert adjusting washer with the required thickness (in this example 1.75 mm) and press the outer ring/tapered-roller bearing back into the clutch housing.
- Position the clutch housing and tighten the screws to the given tightening torque ⇒ [page 75](#)

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